

# CITY OF GAITHERSBURG

## DEPARTMENT OF PUBLIC WORKS

# GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT

## FINAL DESIGN

### GENERAL NOTES

- COORDINATES AND ELEVATIONS SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD 83/91, NAVD88) VIA GPS AND TIED TO THE FOLLOWING C.O.R.S. STATIONS:  
  
DH3146 LOY4 LOYOLA 4 COOP CORS ARP  
DF9217 ZDC1 DC WAAS 1 CORS ARP
- SITE INFORMATION:  
ORCHARD RIDGE STREAM RESTORATION:  
  
QUINCE ORCHARD RD  
GAITHERSBURG, MD 20877-2038  
TAX MAP: FS23 PARCEL: N600 PT PAR. A  
DEED REFERENCE: 20779/409  
ZONING: MXD - MIXED USE DEVELOPMENT  
  
LAKELANDS STREAM RESTORATION:  
  
SUMMER WALK DR  
GAITHERSBURG, MD 20877-2038  
TAX MAP: FS23 SUBD: 290 BLOCK: E PLAT: 21921  
DEED REFERENCE: 35798/477  
ZONING: MXD - MIXED USE DEVELOPMENT  
  
POTOMAC ELECTRIC POWER COMPANY  
30 EASEMENT  
GAITHERSBURG, MD 20877-2038  
L: 3728 F: 434
- CONTACT MISS UTILITY (1-800-257-7777) A MINIMUM OF 48 HOURS IN ADVANCE OF STARTING ON-SITE CONSTRUCTION.
- PROPERTY LINES SHOWN ARE FOR OUTLINE PURPOSES ONLY AND ARE APPROXIMATE. THIS PLAN IS NOT INTENDED TO BE A PROPERTY LINE SURVEY.
- THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS AND ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S OWN EXPENSE.
- FIELD RUN TOPOGRAPHIC SURVEY WAS COMPLETED BY CENTURY ENGINEERING, INC. IN MARCH 2016.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- DUE TO INTERIM STREAM BED AND BANK EROSION, AND/OR THE ABSENCE OF DETAILED FIELD RUN TOPOGRAPHY, PROPOSED STREAM STABILIZATION STRUCTURES SHALL BE CONDUCTED AS DIRECTED BY THE ENGINEER IN THE FIELD.
- THE UNNAMED TRIBUTARIES TO MUDDY BRANCH ARE DESIGNATED AS STREAM USE I-P. IN STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR (COMAR 26.08.02.11).
- FLOODPLAIN NOTES:  
10.1. THIS PROJECT RESULTS IN NO INCREASES IN THE 100-YR WATER SURFACE ELEVATION GREATER THAN 0.2 FEET. ALL CHANGES IN THE 100-YR WATER SURFACE ELEVATION ASSOCIATED WITH THIS PROJECT REMAIN ON CITY OF GAITHERSBURG PROPERTY. NO IMPROVED PROPERTIES WILL BE IMPACTED.  
10.2. THIS PLAN MEETS ALL OF THE REQUIREMENTS OF THE CITY OF GAITHERSBURG CODE OF ORDINANCES CHAPTER 10 - FLOODPLAIN MANAGEMENT (ENACTED FEBRUARY 21, 2017).  
10.3. THIS PROJECT DOES NOT AFFECT UPSTREAM OR DOWNSTREAM FLOW CONDITIONS. A HYDRAULICS ANALYSIS WAS PERFORMED BY CENTURY ENGINEERING, INC. IN JUNE 2016, CONFIRMING THE UNAFFECTED UPSTREAM CHANNEL CONDITIONS. FLOWS DOWNSTREAM OF BOTH PROJECT SITES IS ATTENUATED BY EXISTING CULVERT CROSSINGS. THE FLOW CAPACITY WILL REMAIN THE SAME FOR THE EXISTING CULVERT CROSSINGS, RESULTING IN NO CHANGE IN DOWNSTREAM CONDITIONS.

### SPECIAL CONSTRUCTION REQUIREMENTS FOR WORK PERFORMED IN THE VICINITY OF THE EXISTING SEWER MAINS

- CONSTRUCTION VEHICLES GENERATING A LOAD GREATER THAN AN AASHTO H20 AND VIBRATORY COMPACTION EQUIPMENT ARE NOT PERMITTED WITHIN 10 FEET CLEAR OF THE EXISTING 8", 12", AND 24" SEWER MAIN(S).
- THE CONTRACTOR SHALL SUBMIT CONSTRUCTION VEHICLE SPECIFICATIONS FOR ALL VEHICLES TO BE USED CLOSER THAN 10 FEET CLEAR OF EXISTING 8", 12" AND 24" SEWER MAIN(S) TO THE WSSC RELOCATIONS UNIT FOR WSSC APPROVAL PRIOR TO COMMENCING WORK OVER THE MAINS.
- STOCKPILING OF SOIL OR OTHER MATERIAL IS NOT PERMITTED WITHIN 10 FEET CLEAR OF THE MAINS.
- THE CONTRACTOR SHALL LOCATE AND STAKE OUT THE EXISTING 8", 12", AND 24" SEWER MAINS AND MAINTAIN THE MARKERS DURING CONSTRUCTION. UNLESS OTHERWISE APPROVED BY WSSC RELOCATIONS UNIT, CONSTRUCTION VEHICLES ARE NOT PERMITTED WITHIN 10 FEET CLEAR OF THE 8", 12", OR 24" SEWER MAINS AT ANY TIME WHEN LESS THAN 3'-0" OF COVER EXISTS OVER THE MAINS DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AREAS WHERE LESS THAN 3'-0" OF SOIL COVER WILL EXIST OVER THE MAINS DURING HIS CONSTRUCTION OPERATIONS.
- ALL BACKFILL AND COMPACTION OVER THE 8", 12", AND 24" SEWER MAINS WITH LESS THAN 3'-0" OF SOIL COVER MUST BE PERFORMED MANUALLY AND/OR WITH VEHICLES POSITIONED A MINIMUM OF 10 FEET CLEAR OF THE MAIN(S) UNTIL 3'-0" OF COVER IS ACHIEVED. IF NECESSARY, TEMPORARY FILL SHALL BE PLACED OVER THE EXISTING MAINS TO ALLOW WSSC APPROVED VEHICLE TRAFFIC TO CROSS OVER THE PIPELINE.
- ALL EXPOSED ROCKS, BROKEN PAVEMENT, CURBING AND OTHER UNYIELDING DEBRIS HAVING ANY DIMENSION GREATER THAN THREE INCHES SHALL BE REMOVED FROM ABOVE THE MAIN(S) PRIOR TO PLACING AND COMPACTING FILL, SUBGRADE MATERIALS OR PAVING OVER THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE WSSC CONSTRUCTION INSPECTOR AT TELEPHONE NUMBER 301-206-4004 AT LEAST DAYS IN ADVANCE OF ANY GRADING OR PAVING IN THE VICINITY OF THE EXISTING 8", 12", AND 24" SEWER MAIN(S). ALL GRADING AND PAVING OVER THE MAINS SHALL BE COORDINATED AND PERFORMED UNDER THE SUPERVISION OF THE WSSC CONSTRUCTION INSPECTOR.
- THE CONTRACTOR SHALL USE SPECIAL CARE WHILE PERFORMING WORK IN THE VICINITY OF THE EXISTING 8", 12", AND 24" SEWER MAINS WHERE LESS THAN 3'-0" OF SOIL COVER EXISTS AND STRICTLY ADHERE TO THESE SPECIAL CONSTRUCTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE AND/OR REPLACEMENT REQUIRED AS RESULT OF HIS WORK OVER THE MAINS.

### CERTIFICATION OF CUT/FILL/DISTURBED AREA

"I HEREBY CERTIFY THAT THE ESTIMATED TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO 1,410 (ORCHARD RIDGE) AND 1,200 (LAKELANDS) CUBIC YARDS OF EXCAVATION, 798 (ORCHARD RIDGE) AND 1,151 (LAKELANDS) CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE 87,543 (ORCHARD RIDGE) AND 81,507 (LAKELANDS) SQUARE FEET."

*Thomas G. Turner, Jr.*  
THOMAS G. TURNER, JR.  
MD REGISTRATION NO. 16997  
11/17/2017  
DATE

NOTE: EARTHWORK CUT AND FILL QUANTITIES AND AREA OF DISTURBANCE INDICATED ON THIS PLAN ARE SHOWN FOR PURPOSES OF OBTAINING SOIL EROSION AND SEDIMENT CONTROL PLAN APPROVAL AND ARE NOT TO BE USED FOR CONTRACTUAL OBLIGATIONS.

### OWNER'S/DEVELOPER'S CERTIFICATION:

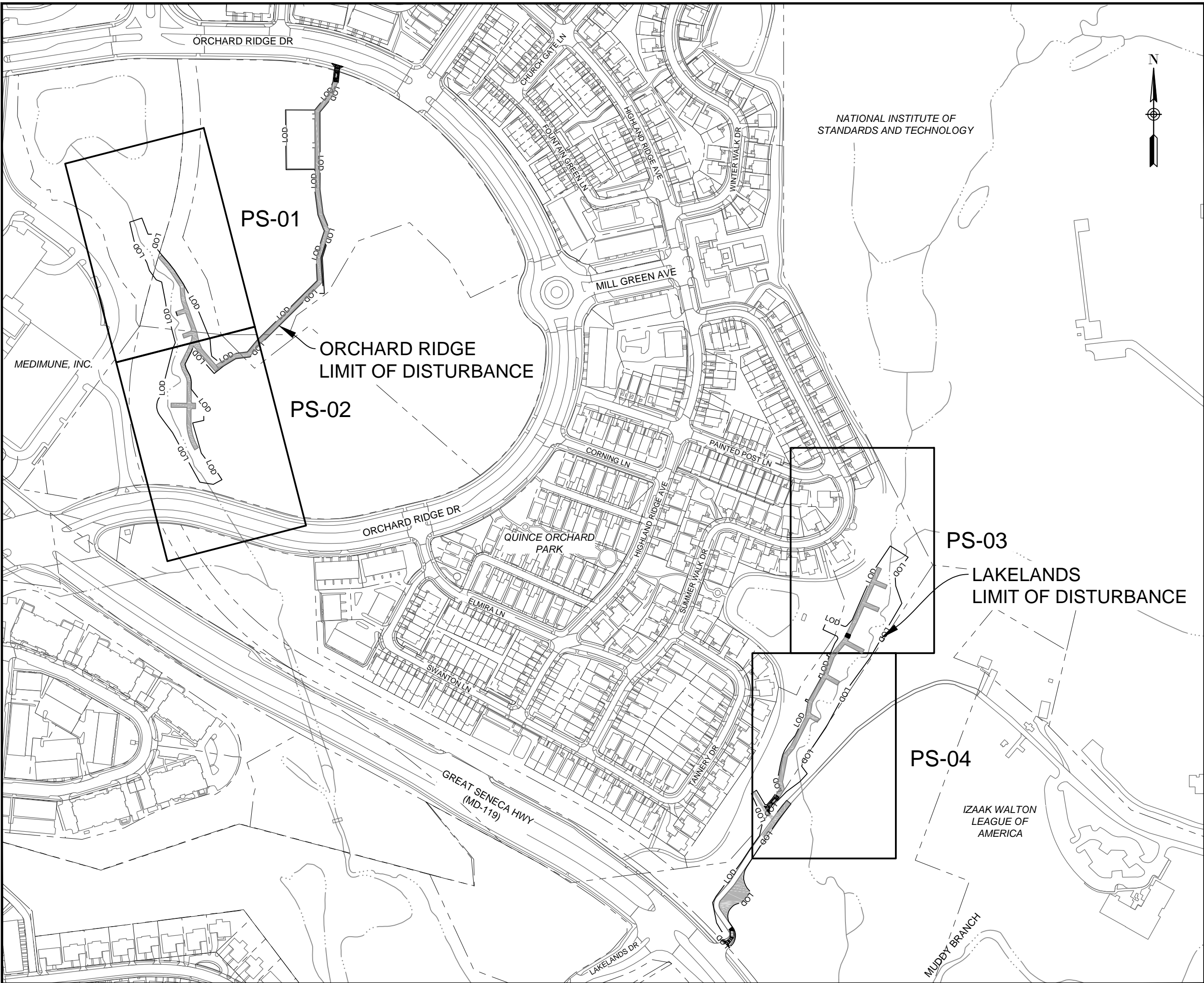
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY PERSONS INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ALSO CERTIFY THAT THE SITE WILL BE INSPECTED AT THE END OF EACH WORK DAY, AND THAT ANY NEEDED MAINTENANCE WILL BE COMPLETED SO AS TO INSURE THAT ALL SEDIMENT CONTROL PRACTICES ARE LEFT IN OPERATIONAL CONDITION. I/WE AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE CITY OF GAITHERSBURG SEDIMENT CONTROL INSPECTOR OR THEIR AUTHORIZED AGENTS.

SIGNATURE OWNER/DEVELOPER  
DATE  
PRINT NAME  
TITLE

### CONSULTANT'S CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MDE 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME 1 & 2, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT REGULATIONS."

*Thomas G. Turner, Jr.*  
THOMAS G. TURNER, JR.  
16997  
PRINT NAME  
MD P.E. LICENSE NUMBER  
11/17/2017  
DATE



### SHEET LAYOUT

1" = 250'

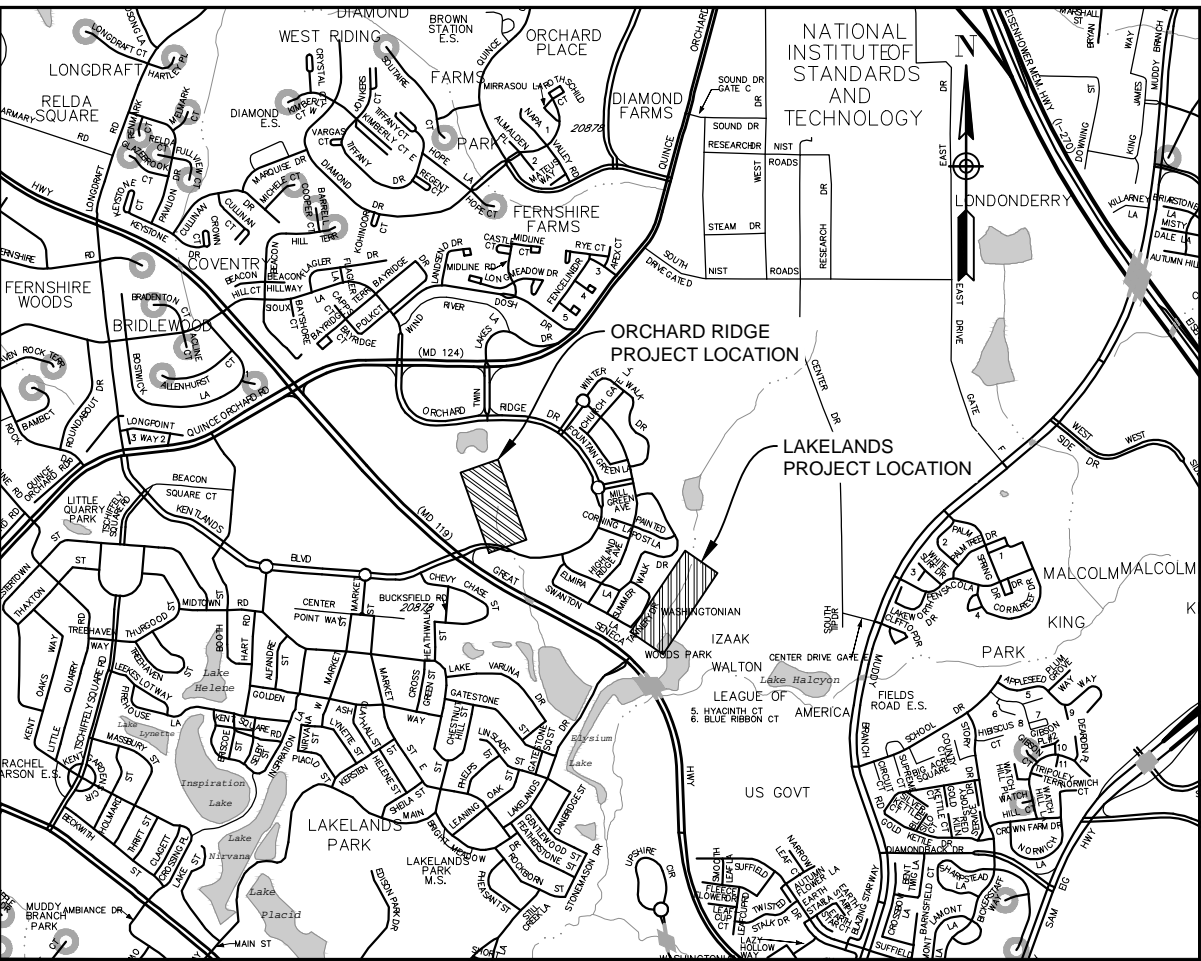
EXISTING FEATURES	PROPOSED FEATURES	EROSION & SEDIMENT CONTROL FEATURES
5' MAJOR CONTOUR 1' MINOR CONTOUR EDGE OF PAVEMENT BUILDING PROPERTY BOUNDARY EASEMENT LINE WATERS OF THE U.S. TREE LINE TREE ≥ 12 INCHES DBH NON-TIDAL WETLAND FEMA 100-YR FLOODPLAIN 25' NON-TIDAL WETLAND BUFFER SEWER LINE WITH MANHOLE STORM DRAIN STORM DRAIN INLET WATER LINE OVERHEAD ELECTRIC LINE TRAVERSE POINT LIMIT OF SURVEY FENCE	PROPOSED 5' MAJOR CONTOUR PROPOSED 1' MINOR CONTOUR CLASS II SCOUR PROTECTION CLASS I CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL CLASS I SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL CLASS 0 CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL CLASS 0 SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL GRADE CONTROL LOG STRUCTURE (GCLS) CASCADE STEP POOL (CSP) CLAY CHANNEL BLOCK (CCB) WETLAND DEPRESSONAL AREA (WDA) CONCRETE DROP STRUCTURE PIPE	LIMIT OF DISTURBANCE SUPER SILT FENCE SANDBAG DIVERSION DIVERSION HOSE WITH INTAKE OUTLET PROTECTION FILTER BAG PORTABLE SEDIMENT TANK PUMP TEMPORARY MULCH FOR ACCESS TREE PROTECTION PLANKING TREE TO BE REMOVED STABILIZED CONSTRUCTION ENTRANCE TEMPORARY CLASS I RIPRAP TEMPORARY ACCESS CULVERT

### PEPCO NOTES (LAKELANDS)

- CONTACT KEVIN WILSON, PEPCO DISTRIBUTION DESIGNER AT 301-548-4345 ONE WEEK PRIOR TO PERFORMING WORK NEAR PEPCO LINES ON THE LAKELANDS RESTORATION SITE AND TO COORDINATE GUY WIRE REMOVAL AND RESET.
- A MINIMUM OF 5-FEET OF CLEARANCE FROM THE PEPCO NEUTRAL WIRE MUST BE MAINTAINED AT ALL TIMES. A MINIMUM OF 10-FEET MUST BE MAINTAINED FROM THE PRIMARY LINE AND PRIMARY EQUIPMENT CONNECTIONS AT ALL TIMES PER THE MARYLAND HIGH VOLTAGE ACT.
- REFER TO THE LATEST EDITION OF NATIONAL ELECTRICAL SAFETY CODE, RULE 231-234 FOR CONDUCTOR CLEARANCES.
- GUY WIRES MUST BE REMOVED AND RE-SET ONE AT A TIME. THE CONTRACTOR IS TO CONTACT KEVIN WILSON (PEPCO) TO COORDINATE GUY WIRE REMOVAL AND RE-SET.

RELATED REQUIRED PERMITS					
To be completed by the consultant and placed on the first sheet of the Sediment Control plan set for all projects.					
IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL PERMIT					
TYPE OF PERMIT	REQD	NOT REQD	PERMIT #	EXPIRATION DATE	WORK RESTRICTION DATES
Floodplain City of Gaithersburg					
WATERWAYS/WETLAND(S)					
a. Corps of Engineers			2017-60729	JUNE 30, 2020	
b. MDE					MARCH 1 - JUNE 15
c. MDE Water Quality Certification					
MDE Dam Safety					
N.P.D.S.					DATE FILED
NOTICE OF INTENT					6/6/2017
OTHERS (Please List):					

NOVEMBER 2016



### VICINITY MAP

1" = 2,000'

### SHEET INDEX

SHEET NO.	SHEET TITLE
1	COVER SHEET
2	DRAINAGE AREA MAP
3-7	STREAM RESTORATION DETAIL SHEETS

### ORCHARD RIDGE STREAM RESTORATION

8	ORCHARD RIDGE GEOMETRY SHEET
9	ORCHARD RIDGE OVERVIEW SHEET
10-11	ORCHARD RIDGE STREAM RESTORATION PLAN
12	ORCHARD RIDGE STREAM PROFILE
13-15	ORCHARD RIDGE CROSS-SECTION SHEETS
16	ORCHARD RIDGE E&S CONTROL OVERVIEW SHEET
17-20	ORCHARD RIDGE E&S CONTROL PLANS
21	ORCHARD RIDGE E&S CONTROL NOTES
22	ORCHARD RIDGE E&S CONTROL DETAILS
23	ORCHARD RIDGE MAINTENANCE OF TRAFFIC PLAN
24	ORCHARD RIDGE LANDSCAPE PLAN
25	ORCHARD RIDGE LANDSCAPE NOTES
26	ORCHARD RIDGE LANDSCAPE DETAILS
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### LAKELANDS STREAM RESTORATION

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36-37	LAKELANDS E&S CONTROL PLAN
38	LAKELANDS E&S CONTROL NOTES
39-40	LAKELANDS E&S CONTROL DETAILS
41	LAKELANDS MAINTENANCE OF TRAFFIC PLAN
42	LAKELANDS LANDSCAPE PLAN
43	LAKELANDS LANDSCAPE NOTES
44	LAKELANDS LANDSCAPE DETAILS
45	LAKELANDS FOREST PRESERVATION PLAN

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

### REVISIONS

NO.	DATE	DESCRIPTION



CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

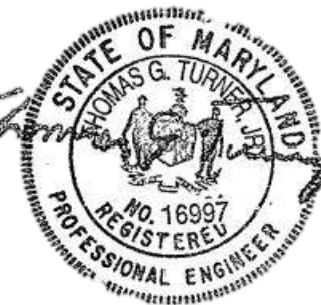
PROJECT NAME:

## GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT

SHEET TITLE:

### COVER SHEET

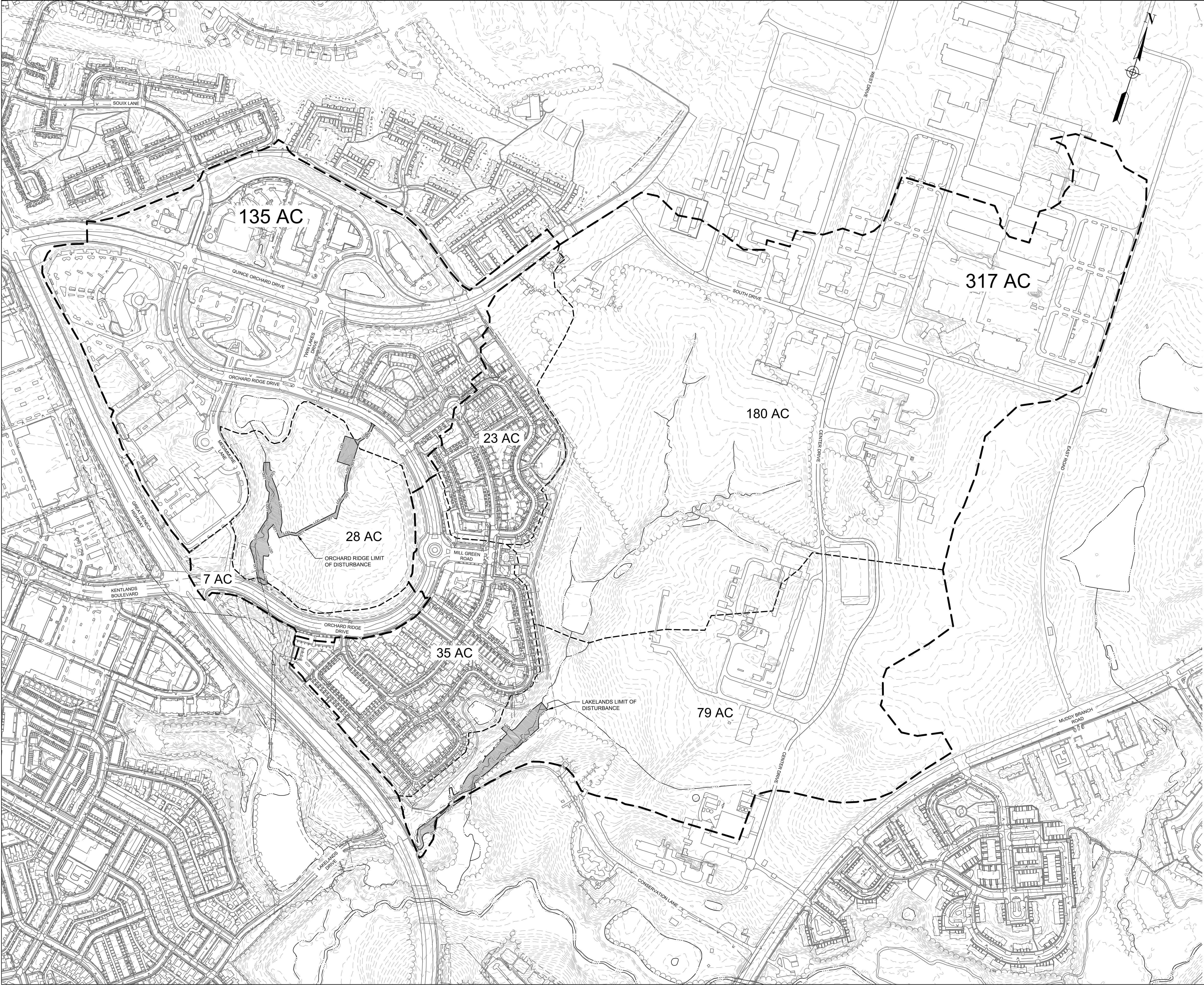
SEAL:



PROJECT NO.: 151078.03  
SCALE: AS NOTED  
DATE: 1/31/2018  
DESIGN: AB/SH  
CHECK: CL  
DWG NO.: T-01 of 01  
(SC-01 of 15)  
SHEET NO.: 1 OF 45

CONTRACTOR SHALL NOTIFY MISS UTILITY AT LEAST 48 HOURS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS:  
MISS UTILITY - (800) 257-7777





CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317


LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

DRAINAGE AREA MAP

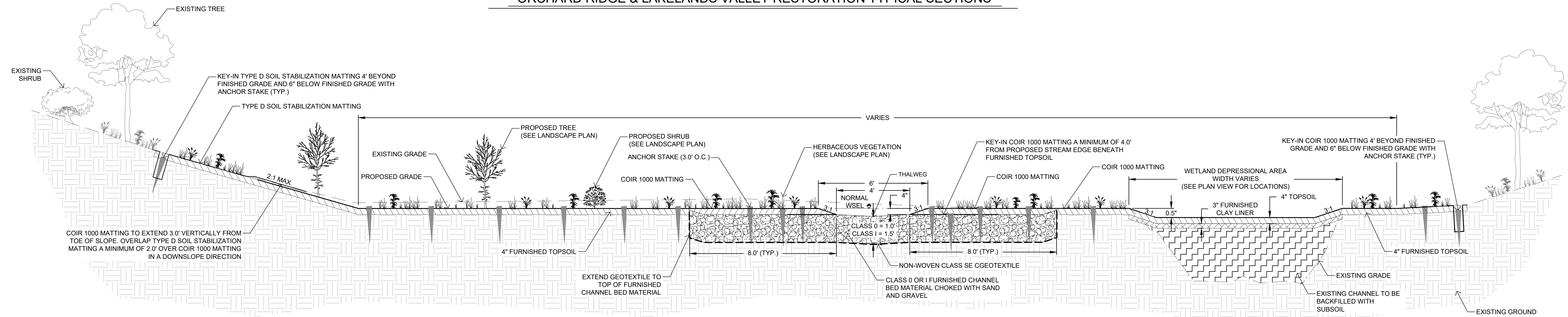


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SCALE: 1" = 300'  
DESIGN: AB/SH  
DWG NO: SC-02 of 15  
SHEET NO: 2 OF 45

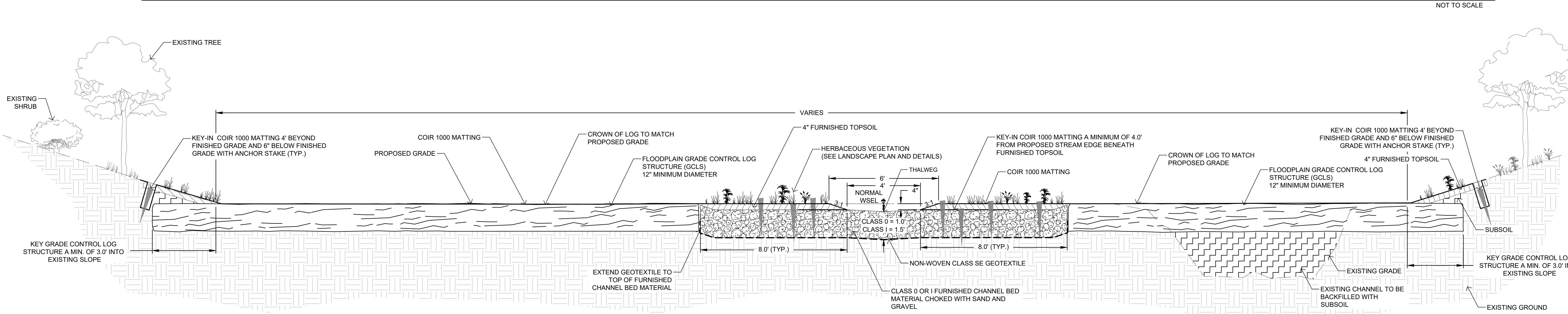
DATE: 10/25/2017  
CHECK: CL



ORCHARD RIDGE & LAKELANDS VALLEY RESTORATION TYPICAL SECTIONS



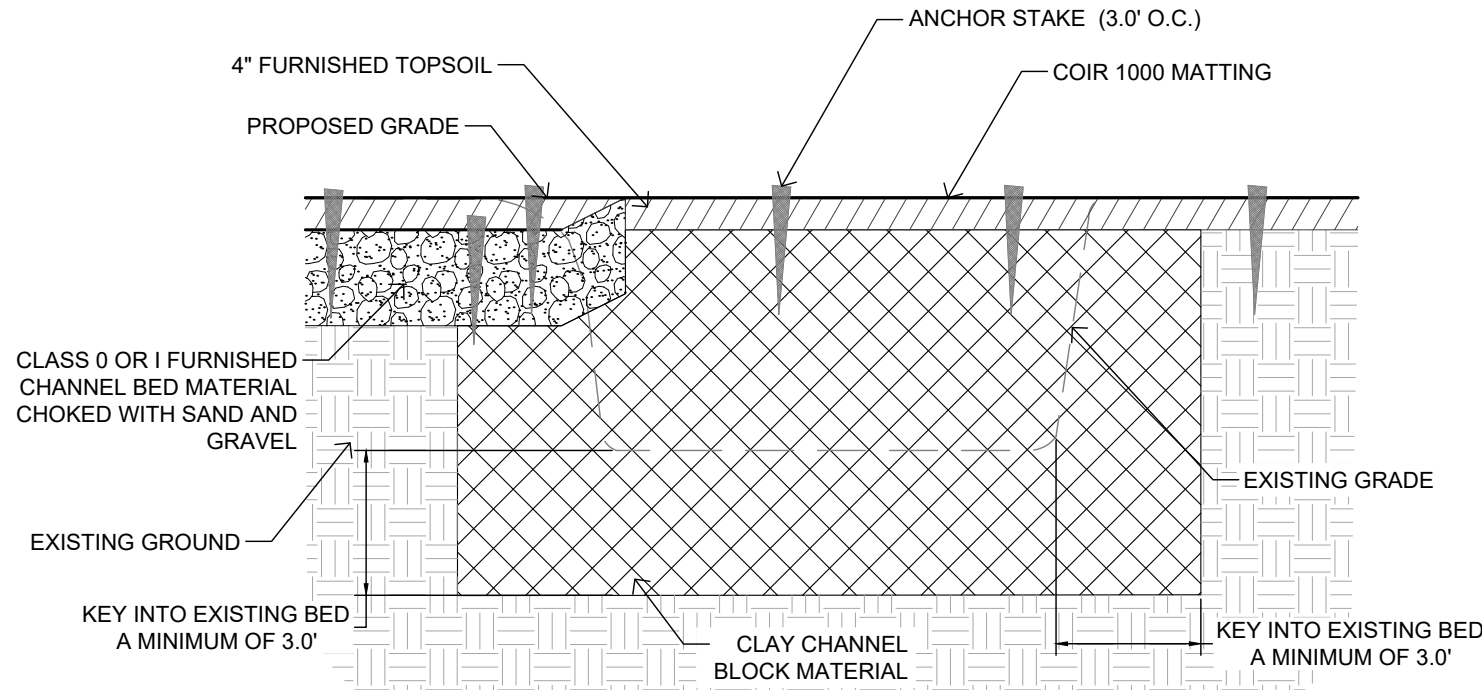
TYPICAL STREAM RESTORATION/RELOCATION CROSS-SECTION



TYPICAL CROSS-SECTION WITH GRADE CONTROL LOG STRUCTURE

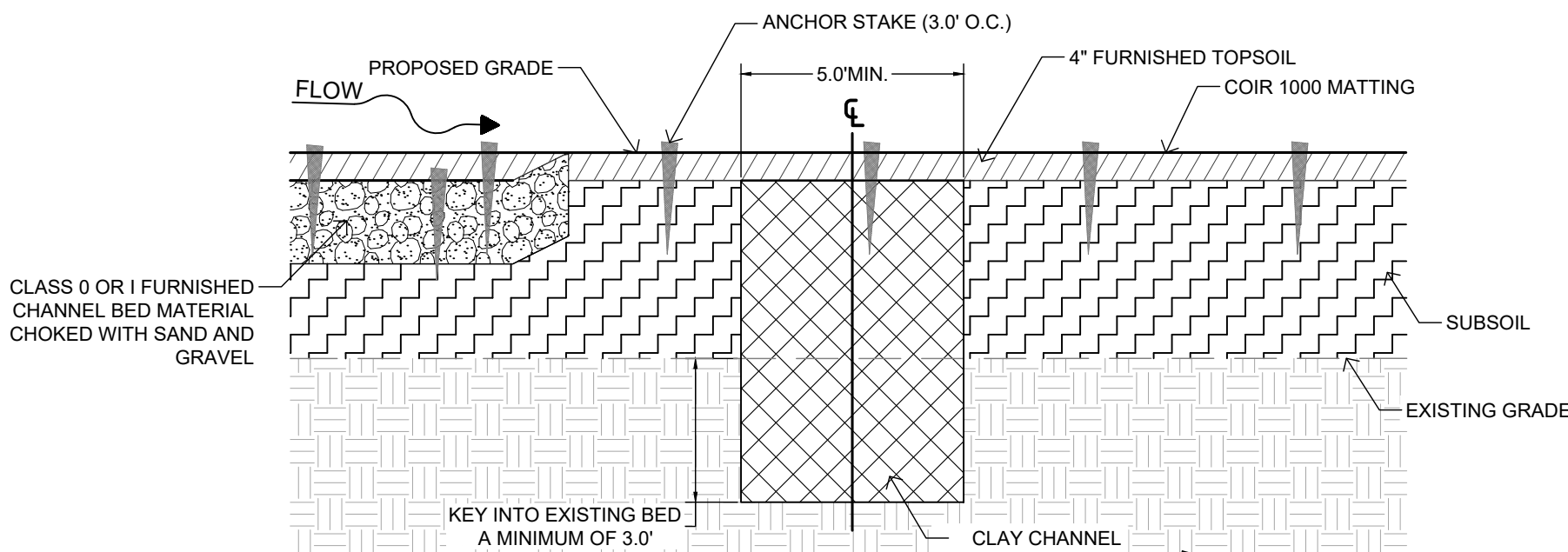
- NOTES:
1. ALL MATTING SHALL OVERLAP IN A DOWN VALLEY OR DOWNSTREAM DIRECTION.
  2. FLOODPLAIN GRADE CONTROL LOG STRUCTURES (GCLS) TO BE PLACED PERPENDICULAR TO THE VALLEY AS SHOWN ON THE PLAN AND AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE.
  3. INSTALL FLOODPLAIN GRADE CONTROL LOG STRUCTURES (GCLS) SUCH THAT THE CROWN OF LOG MATCHES THE PROPOSED GRADE.
  4. WHEN PLACING FURNISHED CHANNEL BED MATERIAL, SMALL AND LARGE STONES MUST BE MIXED TO MINIMIZE VOID SPACE AND PROMOTE INTERLOCKING. SAND AND GRAVEL SHALL BE WASHED INTO THE FURNISHED CHANNEL BED MATERIAL TO ENSURE ALL INTERSTITIAL VOIDS ARE FILLED AND SURFACE FLOW IS ACHIEVED. DUMPING OF STONE WILL NOT BE PERMITTED.
  5. THALWEG SHALL BE ESTABLISHED IN THE FIELD AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE.

CLAY CHANNEL BLOCK DETAILS



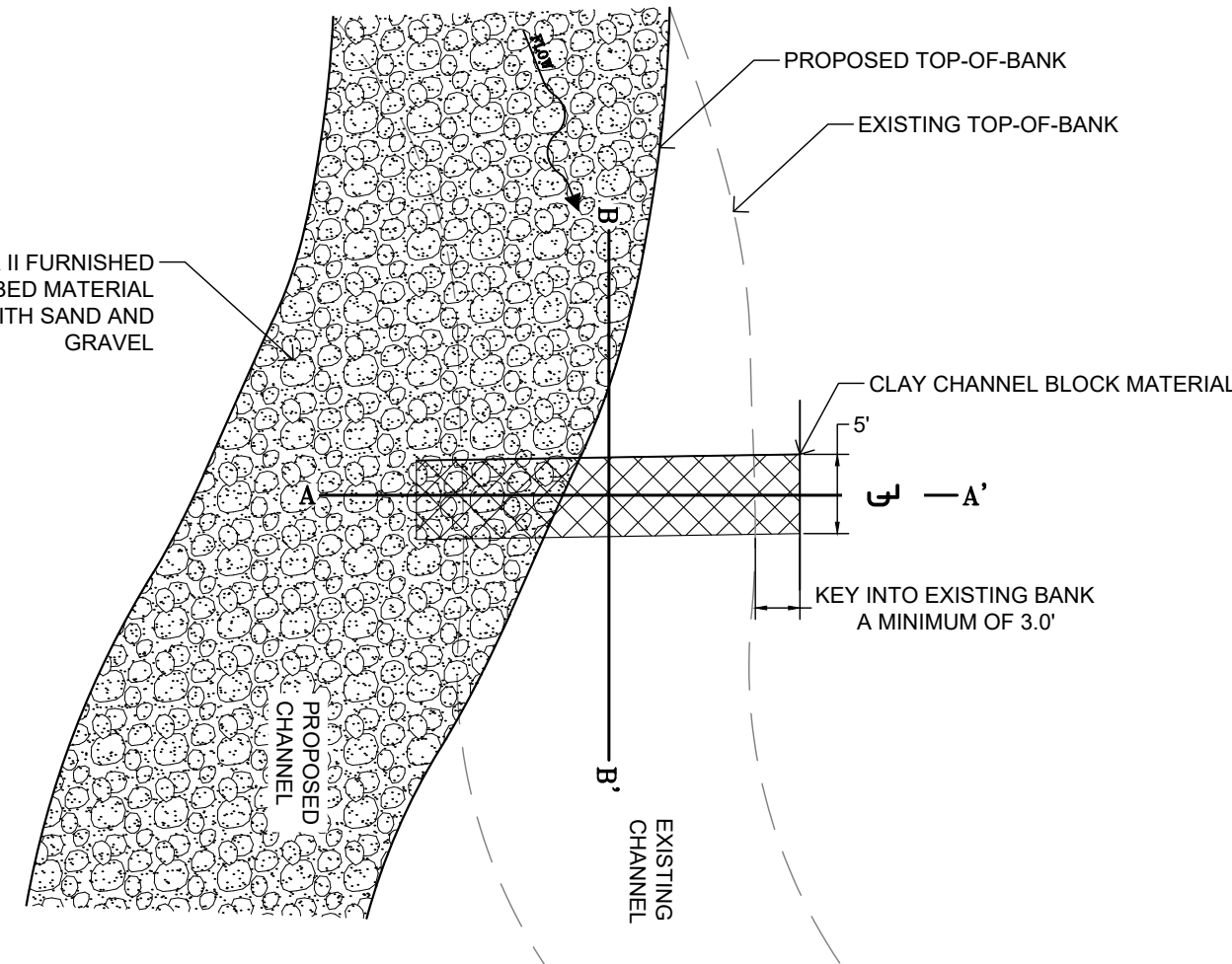
CLAY CHANNEL BLOCK (CCB) - CROSS SECTION A-A'

NOT TO SCALE



CLAY CHANNEL BLOCK (CCB) - CROSS SECTION B-B'

NOT TO SCALE



CLAY CHANNEL BLOCK (CCB) - PLAN VIEW

NOTE: SEE CLAY CHANNEL BLOCK CROSS-SECTION DETAILS ON THIS SHEET FOR ADDITIONAL INFORMATION REGARDING SUBGRADE CONSTRUCTION.

NOT TO SCALE

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS

NO.	DATE	DESCRIPTION

**MM CENTURY**  
ENGINEERING


CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**STREAM RESTORATION  
DETAILS**

SEAL:	PROJECT NO.: 151078.03	SCALE: N.T.S.	DATE: 10/25/2017
	DESIGN: AB/SH	CHECK: CL	
	DWG NO:		
	DE-01 OF 05		
	SHEET NO:	3 OF 45	



EXTEND GEOTEXTILE TO TOP OF WEIR STONE AND TRIM FLUSH

2.0' 2.0' MIN.

WEIR STONE

FOOTER STONE

SPLASH STONE

FOOTER STONE

NON-WOVEN CLASS SE GEOTEXTILE

EXISTING GRADE

EXISTING GROUND

CLAY CHANNEL BLOCK (SEE PLAN VIEW FOR LOCATIONS)

CASCADE POOL

NORMAL WEIR

1.0'

1.6'

CLASS I CHANNEL BED MATERIAL CHOKED WITH SAND AND GRAVEL

0.75'

CASCADE WEIR

WEIR STONE

IMBRICATED CASCADE BOULDER (SEE SIZE TABLE ON THIS SHEET)

FOOTER STONE

SPLASH STONE

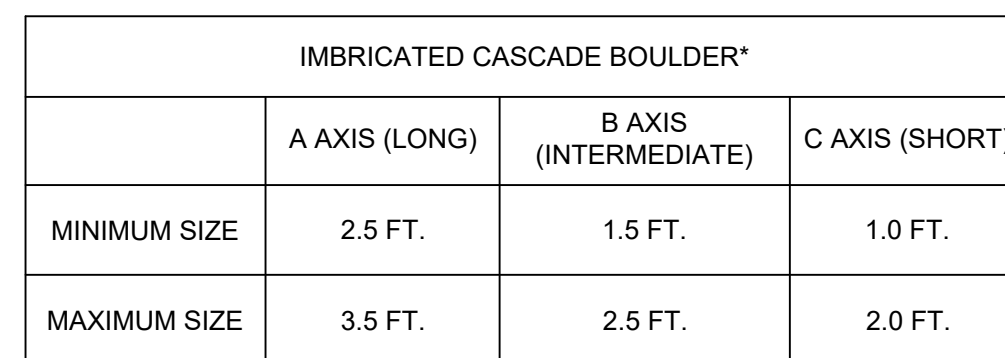
FOOTER STONE

5.0'

KEY-IN CLAY CHANNEL BLOCK 3.0' BELOW EXISTING GRADE

SUBSOIL

NOTES:	NOT TO SCALE
1. SECTIONS VIEWED AS FACING DOWNSTREAM.	
2. CSP#1 TO EXTEND AN ADDITIONAL 3.0' INTO EACH BANK. SEE PLAN VIEW.	
3. WHEN PLACING FURNISHED CHANNEL BED MATERIAL, SMALL AND LARGE STONES MUST BE MIXED TO MINIMIZE VOID SPACE AND PROMOTE INTERLOCKING. SAND AND GRAVEL SHALL BE WASHED INTO THE FURNISHED CHANNEL BED MATERIAL TO ENSURE ALL INTERSTITIAL VOIDS ARE FILLED AND SURFACE FLOW IS ACHIEVED. DUMPING OF STONE WILL NOT BE PERMITTED.	
4. IMBRICATED BOULDERS SHALL BE NEATLY STACKED WITH STAGGERED JOINTS SUCH THAT EACH STONE RESTS FIRMLY ON TWO STONES IN THE TIER BELOW WITH MINIMUM VOID SPACE. BOULDERS SHALL REST SOLIDLY ON THE ROCK LAYER OR SUBGRADE BELOW WITH MINIMAL OPPORTUNITY FOR MOVEMENT.	KEY-IN TYPE D SOIL STABILIZATION MATT BEYOND TOP-OF-BANK AND 6" BELOW FINI



\*IMBRICATED CASCADE BOULDERS TO HAVE A MINIMUM DENSITY OF 160 LBS/FT<sup>3</sup> AND A MINIMUM WEIGHT OF 0.7 TONS PER BOULDER.

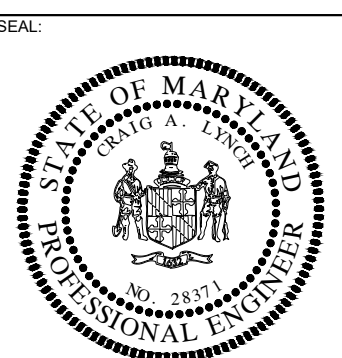
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**mm CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

SHEET TITLE:

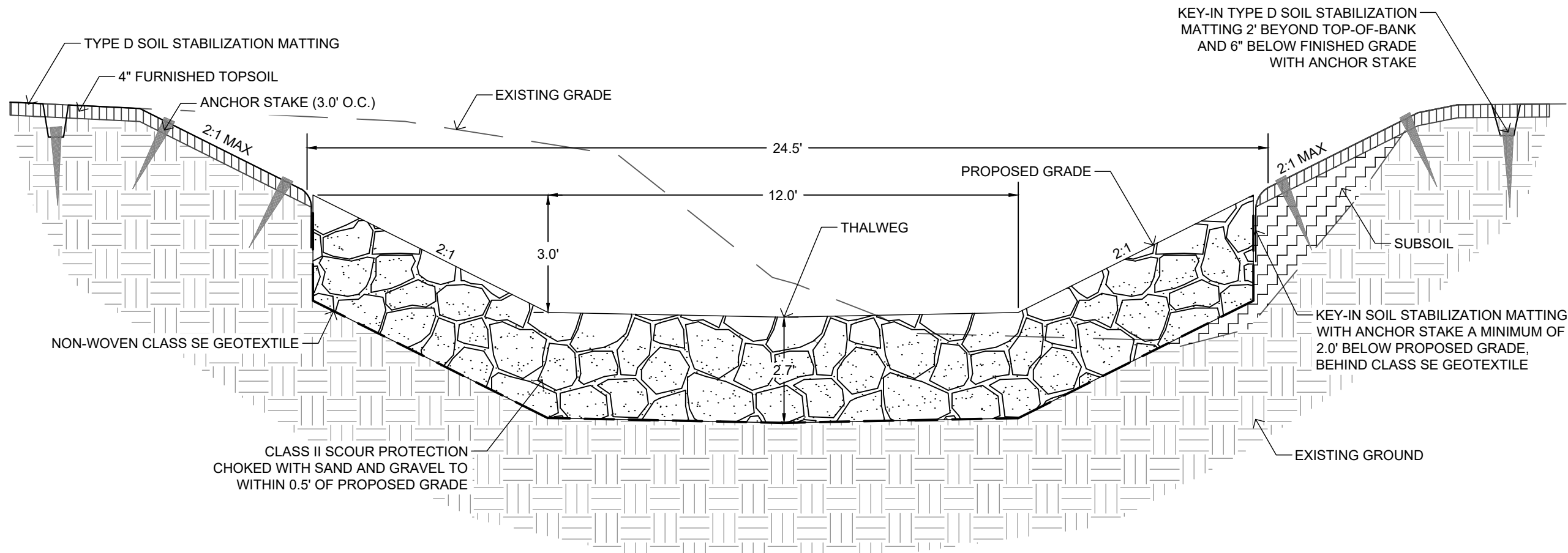
# STREAM RESTORATION DETAILS



PROJECT NO.: <b>151078.03</b>	
SCALE: <b>N.T.S.</b>	DATE: <b>10/25/2017</b>
DESIGN: <b>AB/SH</b>	CHECK: <b>CL</b>
DWG NO: <b>DE-02 OF 05</b>	
SHEET NO: <b>4 OF 45</b>	

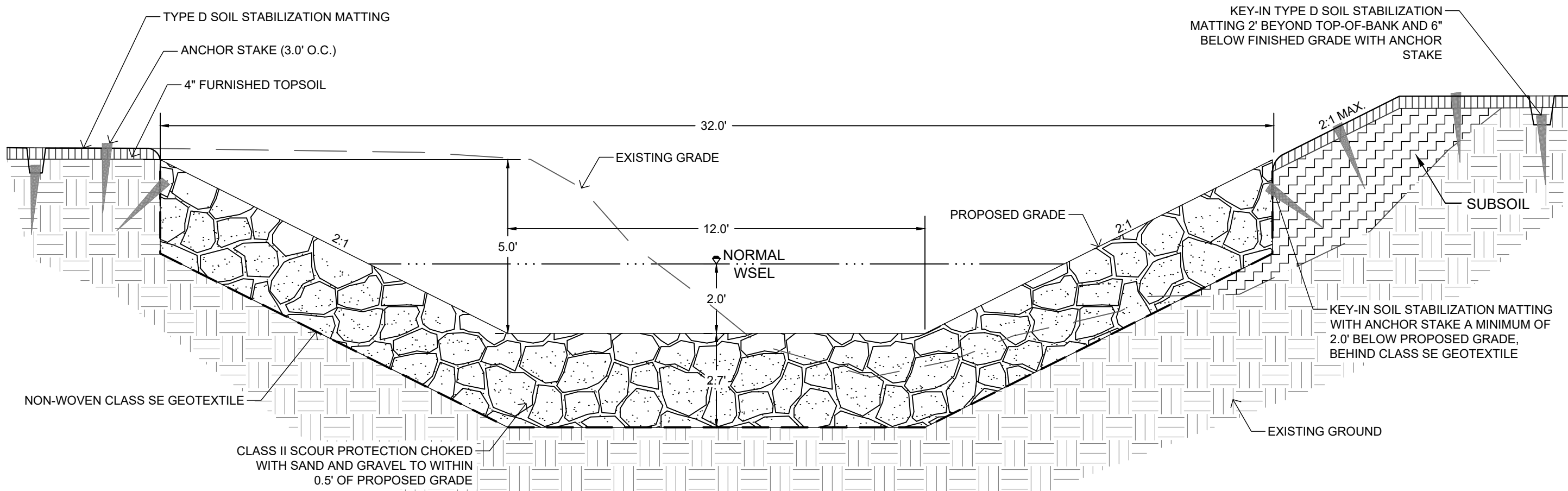


ORCHARD RIDGE SCOUR PROTECTION & PLUNGE POOL DETAILS



ORCHARD RIDGE CLASS II SCOUR PROTECTION CHANNEL - SECTION VIEW (STA. 0+89 TO 1+36)

NOT TO SCALE

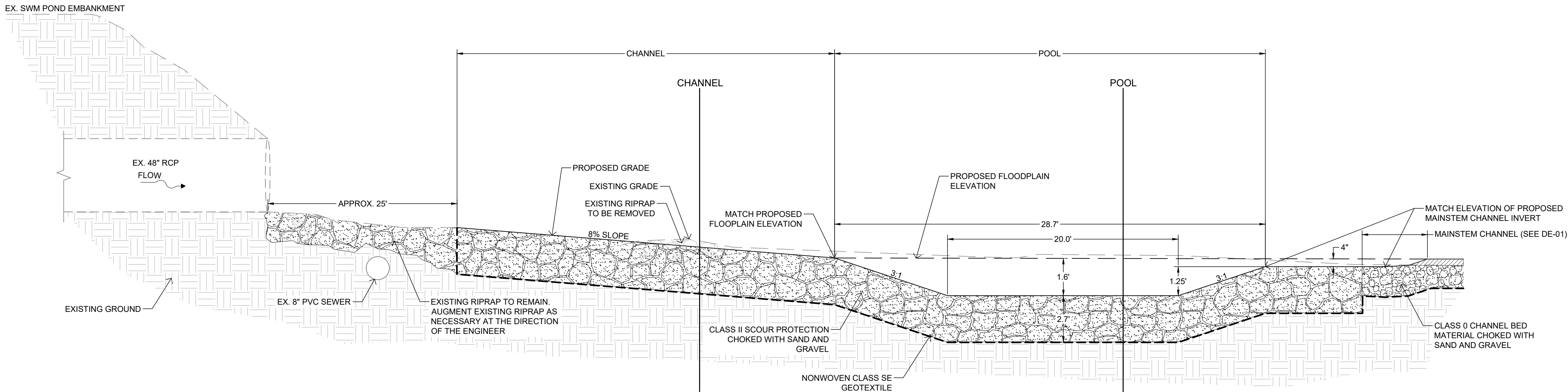


ORCHARD RIDGE PLUNGE POOL - SECTION VIEW

NOT TO SCALE

NOTE: WHEN PLACING CLASS II SCOUR PROTECTION, SMALL AND LARGE STONES MUST BE MIXED TO MINIMIZE VOID SPACE AND PROMOTE INTERLOCKING. SAND AND GRAVEL SHALL BE WASHED INTO THE FURNISHED CHANNEL BED MATERIAL TO ENSURE ALL INTERSTITIAL VOIDS ARE FILLED AND SURFACE FLOW IS ACHIEVED. DUMPING OF STONE WILL NOT BE PERMITTED.

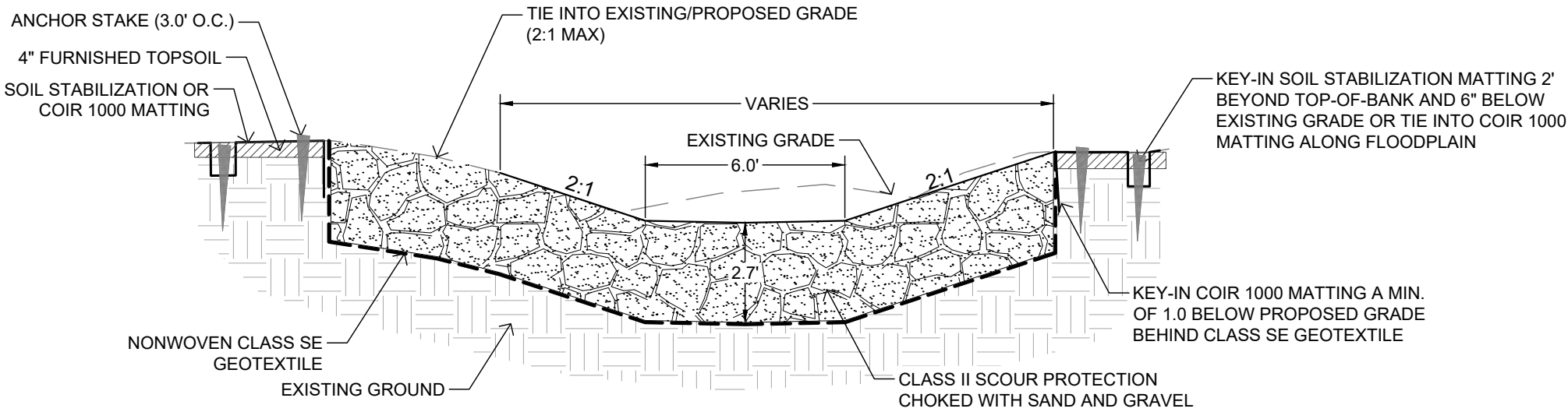
LAKELANDS SWM POND OUTFALL STABILIZATION DETAILS



LAKELANDS SWM POND OUTFALL STABILIZATION - PROFILE VIEW

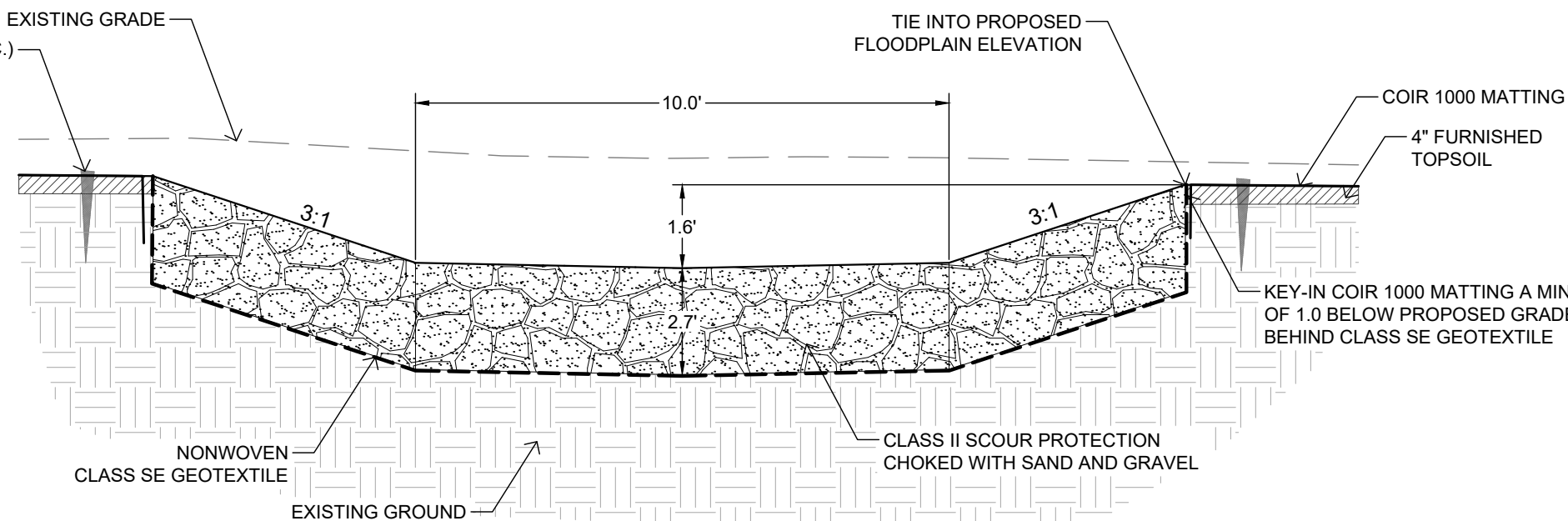
NOT TO SCALE

NOTE: WHEN PLACING CLASS II SCOUR PROTECTION, SMALL AND LARGE STONES MUST BE MIXED TO MINIMIZE VOID SPACE AND PROMOTE INTERLOCKING. SAND AND GRAVEL SHALL BE WASHED INTO THE FURNISHED CHANNEL BED MATERIAL TO ENSURE ALL INTERSTITIAL VOIDS ARE FILLED AND SURFACE FLOW IS ACHIEVED. DUMPING OF STONE WILL NOT BE PERMITTED.



LAKELANDS SWM POND OUTFALL STABILIZATION - CHANNEL SECTION VIEW

NOT TO SCALE



LAKELANDS SWM POND OUTFALL STABILIZATION - POOL SECTION VIEW

NOT TO SCALE

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
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CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS

NO.	DATE	DESCRIPTION

**CENTURY**  
ENGINEERING

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**STREAM RESTORATION  
DETAILS**

SEAL:

PROJECT NO.: 151078.02  
SCALE: N.T.S. DATE: 10/25/2017  
DESIGN: AB/SH CHECK: CL  
DWG NO:

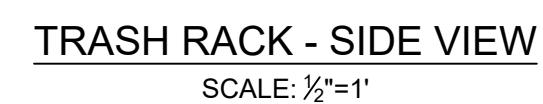
DE-03 OF 05

SHEET NO:

5 OF 45



J:\2015\Transportation\151078.02 Great Seneca Hwy. SWM & Stream Rest\CADD\Lakelands\pDE-P001\_Lakelands.dwg Oct 25, 2017 - 12:13pm



- TRASH RACK NOTES:**
1. TRASH RACKS TO BE INSTALLED OVER ALL WEIR OPENINGS IN STRUCTURE.
  2. HOT DIP GALVANIZE EACH TRASH RACK AFTER FABRICATION AND PRIOR TO INSTALLATION.
  3. PROVIDE FOUR (4) ANCHORS MIN. TOP AND BOTTOM AND SIX (6) ANCHORS MIN. EACH SIDE PER RACK. SPACE ANCHORS AS EVENLY AS POSSIBLE.
  4. ALL ANCHORS SHALL BE LOCATED THREE (3) INCHES MIN. FROM ANY CONCRETE EDGE TO PREVENT SPALLING.
  5. UPSTREAM (NORTH) SIDE TRASH RACKS TO BE PAID FOR INDIVIDUALLY.

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[illegible]

**mm CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE:

## STREAM RESTORATION DETAILS

SEAL:

PROJECT NO.: 151078.02

SCALE: $\frac{1}{2}" = 1'$	DATE: 10/25/2017
-------------------------------	---------------------

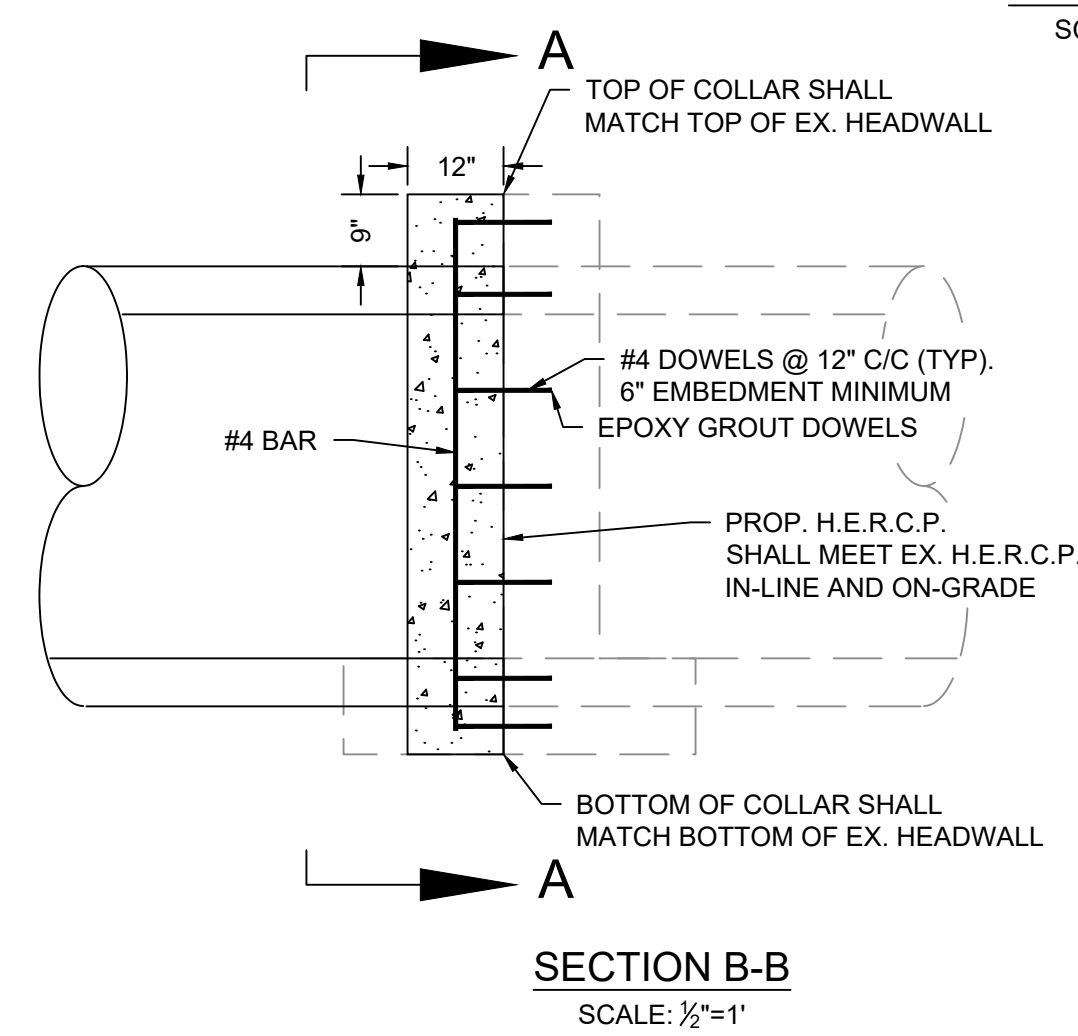
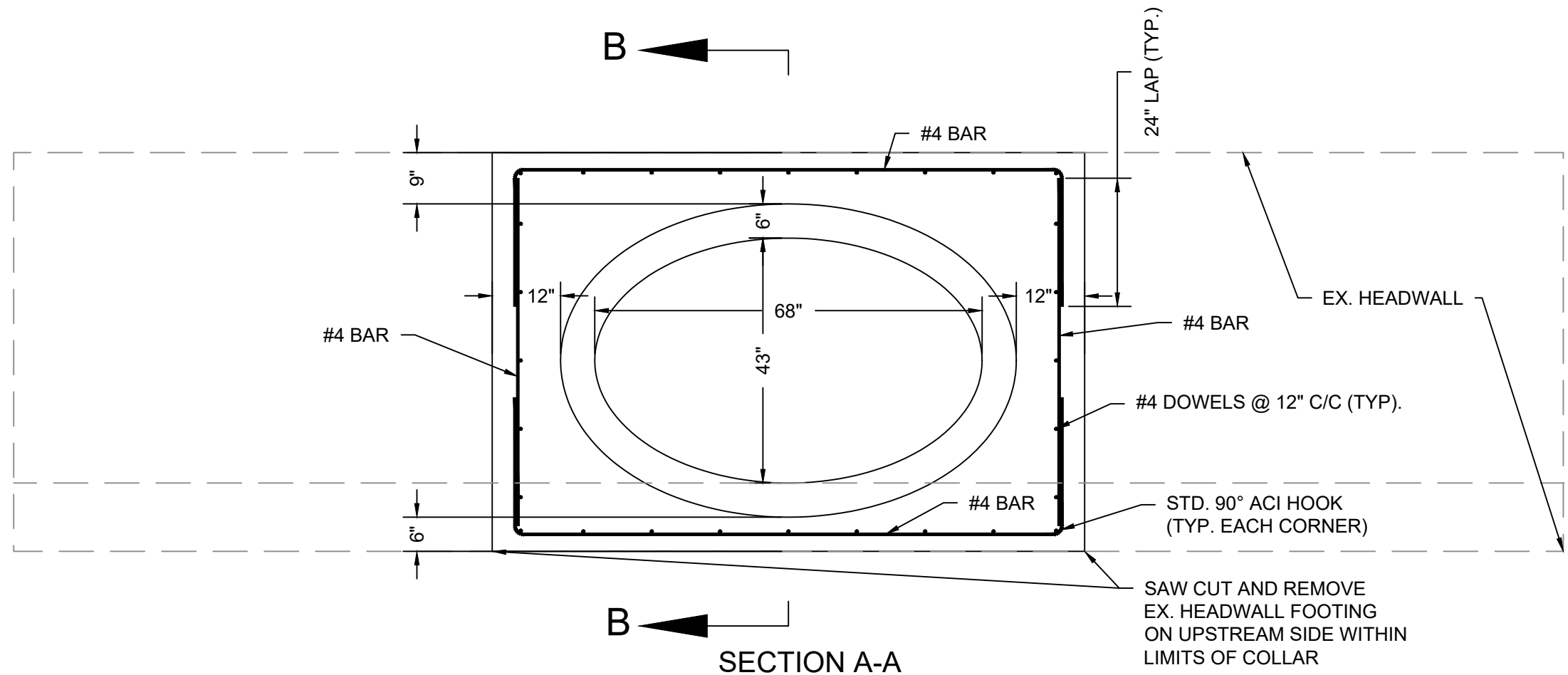
DESIGN:	CHECK:
J.B	C.I

DE-04 OF 05

SHEET NO:

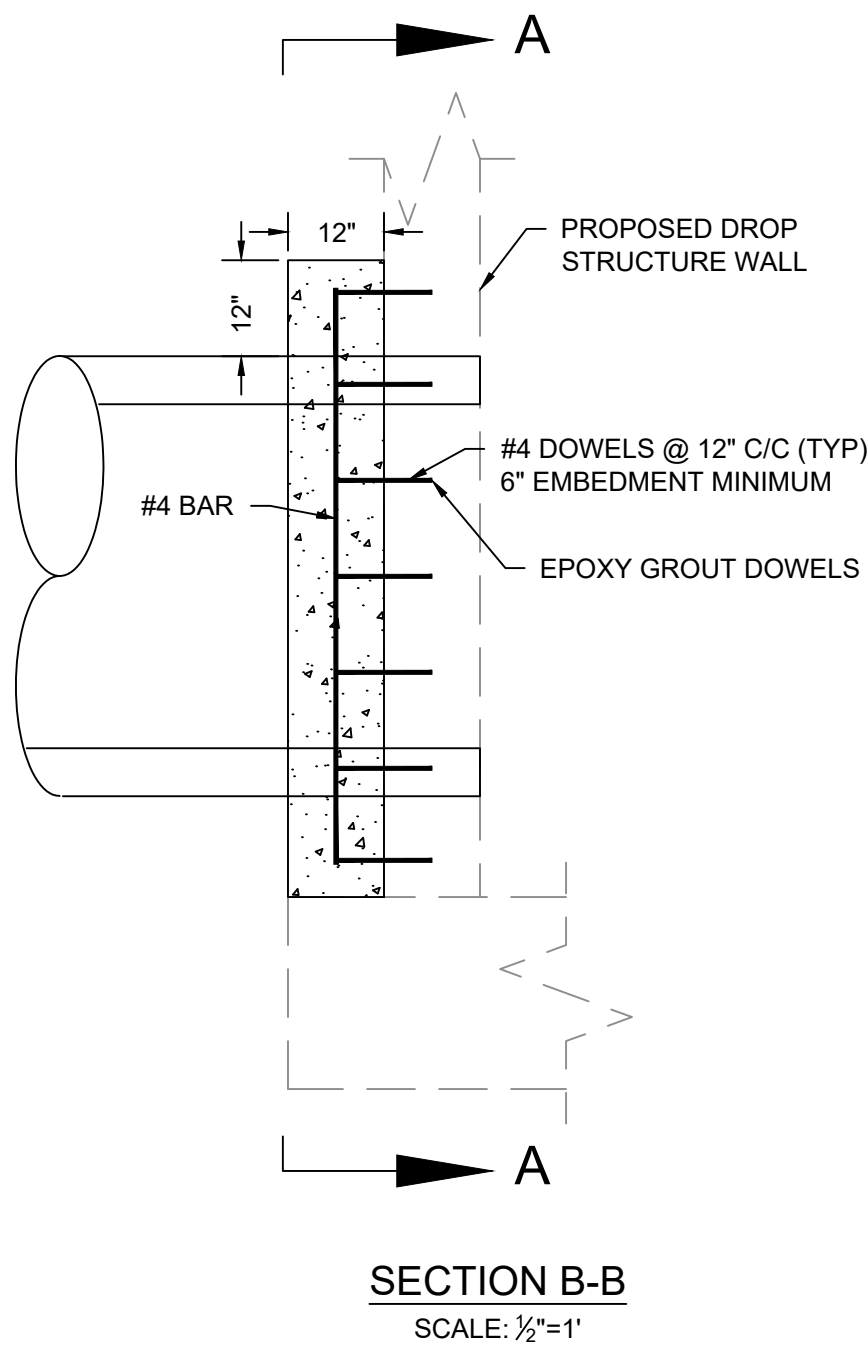
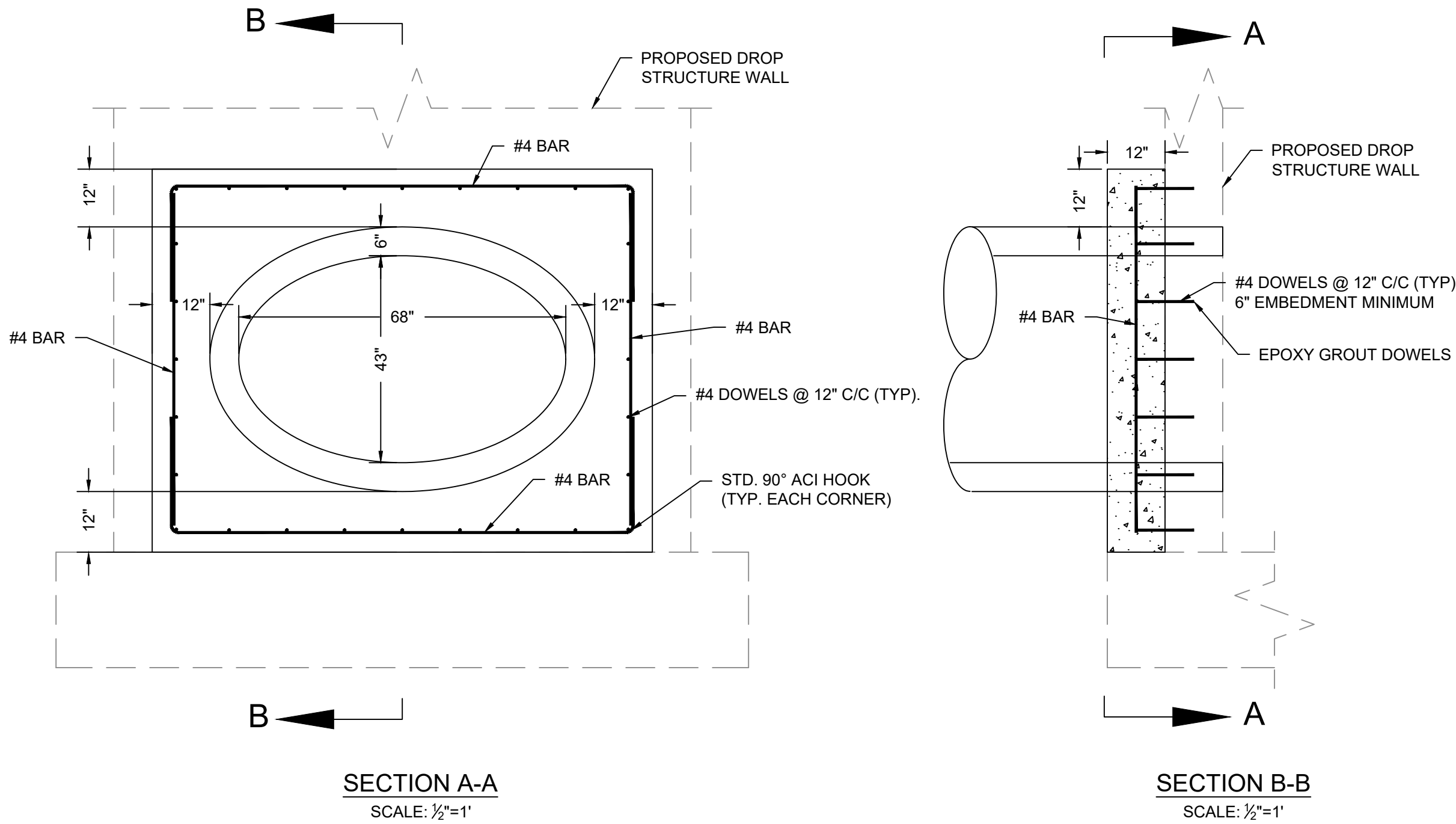
6 OF 45



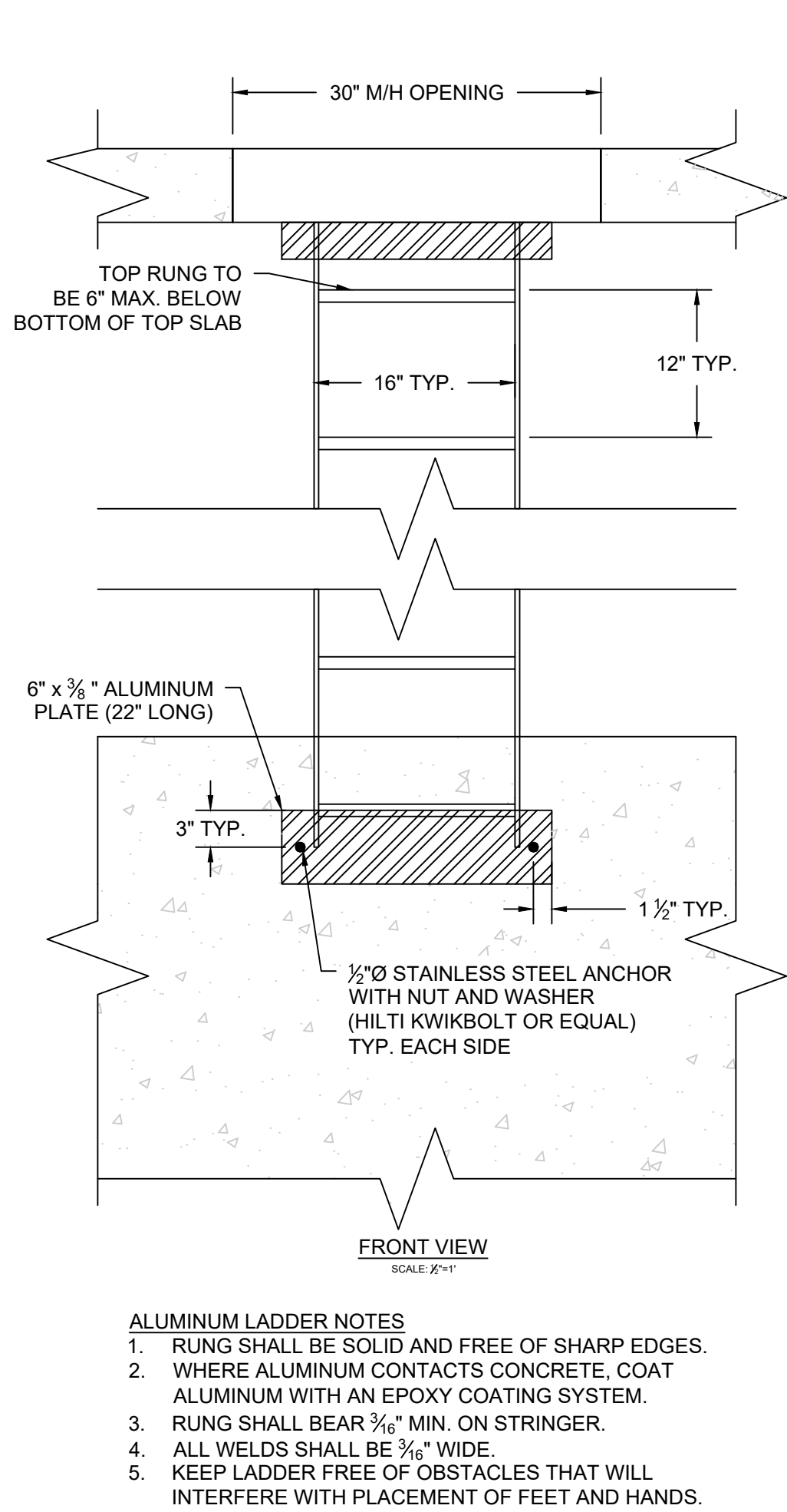
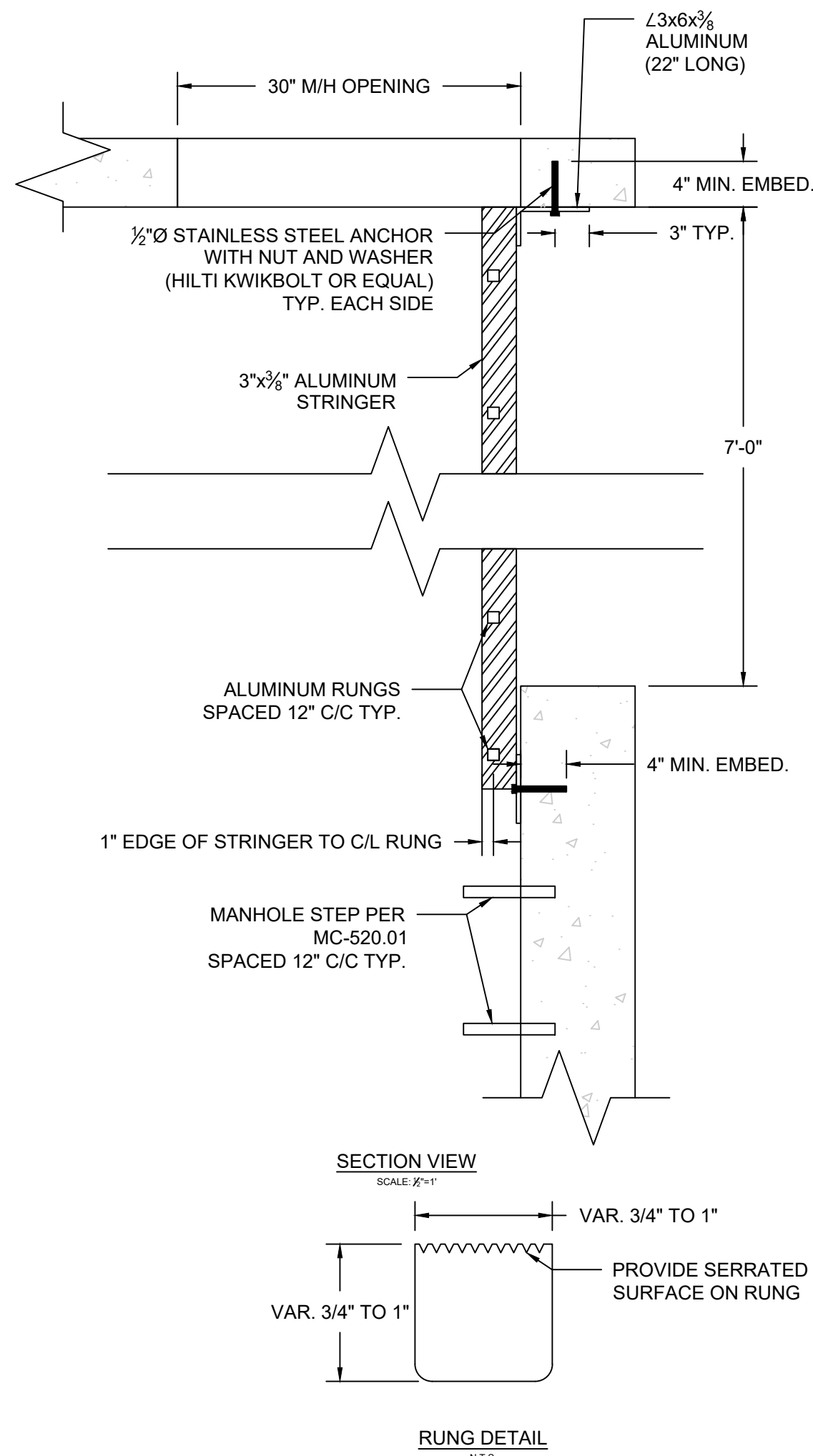


- CONCRETE COLLAR NOTES:**
1. CONCRETE SHALL MEET MD SHA MIX NO. 3 ( $f_c = 3,500$  PSI).
  2. ALL REINFORCEMENT AND DOWELS SHALL CONFIRM TO ASTM A-615 GRADE 60.
  3. MINIMUM COVER SHALL BE 3 INCHES.
  4. ALL COLD CONCRETE SURFACES RECEIVING FRESH CONCRETE SHALL BE SCARIFIED VIA SAND BLASTING AND HAVE BONDING AGENT APPLIED PRIOR TO POURING FRESH CONCRETE.
  5. EPOXY GROUT SHALL BE HILTI HIT-RE-500-SD OR APPROVED EQUAL. USE PER MANUFACTURER'S DIRECTIONS.
  6. BONDING AGENT SHALL BE SIKA ARMATEC 110 EPOCEM OR APPROVED EQUAL. USE PER MANUFACTURER'S DIRECTIONS.
  7. CONCRETE CONSTRUCTION SHALL BE COMPLETED UNDER SUPERVISION OF PERSONNEL OPERATING UNDER RESPONSIBLE CHARGE OF A LICENSE PROFESSIONAL GEOTECHNICAL ENGINEER.

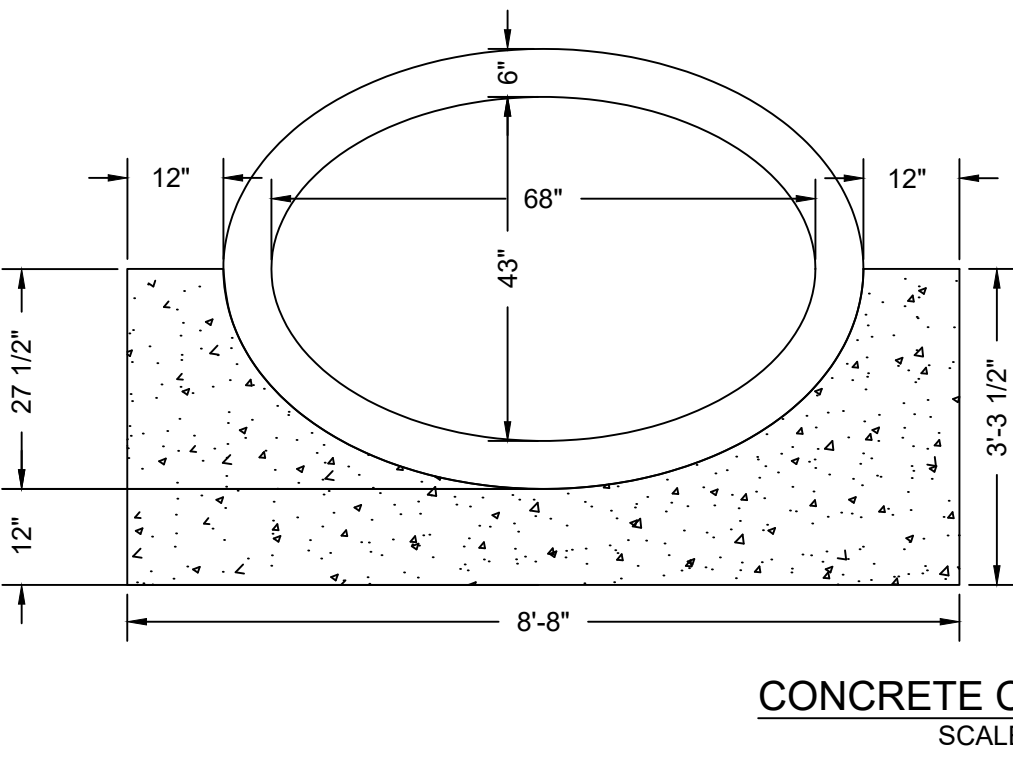
**CONCRETE COLLAR AT EXISTING HEADWALL DETAIL**  
SCALE:  $\frac{1}{2}"=1'$



**CONCRETE COLLAR AT DROP STRUCTURE DETAIL**  
SCALE:  $\frac{1}{2}"=1'$



**RISER LADDER DETAIL**  
SCALE:  $1"=1'$



- CONCRETE CRADLE NOTES:**
1. DO NOT PLACE GRAVEL UNDER CRADLE.
  2. DEWATER ALL GROUNDWATER THROUGH FILTER BAG.
  3. CRADLE SHALL BE POURED AGAINST UNDISTURBED EARTH OR FORMED. FORMS SHALL BE REMOVED PRIOR TO BACKFILL.
  4. CONCRETE SHALL MEET MD SHA MIX NO. 3 ( $f_c = 3,500$  PSI).
  5. POUR CRADLE IN ONE CONTINUOUS POUR.

**CONCRETE CRADLE DETAIL**  
SCALE:  $\frac{1}{2}"=1'$

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LAND OWNER:  
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31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

**CENTURY**  
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CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**STREAM RESTORATION  
DETAILS**

SEAL:	PROJECT NO.: 151078.02	
	SCALE: AS NOTED	DATE: 10/25/2017
	DESIGN: JB	CHECK: CL
	DWG NO.: DE-05	OF 05
SHEET NO.: 7 OF 45		



TRAVERSE POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
104	530844.50	1247105.66	380.72
105	531121.32	1247166.77	371.57
106	531309.21	1247069.31	376.35
107	531451.44	1246980.93	379.17
108	531624.62	1246941.78	382.89
109	531771.04	1246839.29	403.10
110	531734.18	1246659.86	403.68
111	531140.35	1247002.71	374.41

Orchard Ridge Baseline of Construction																
POINT ID	PI	PI	PT	PC	LENGTH	RADIUS	Line/Chord Direction	START POINT	END POINT	DELTA	DEGREE	CENTER NORTHING	CENTER EASTING	EXTERNAL TANGENT	CHORD LENGTH	EXTERNAL DISTANCE
L1			0+00.00	1+36.10	136.101		S23° 24' 27.75"E	1246891.0066,531686.3207	1246945.0758,531561.4204							
C1	1246966.0386,531512.9961	1+88.87			104.895	389.279	S31° 07' 37.69"E	1246945.0758,531561.4204	1246999.1360,531471.8997	015° 26' 19.88"	014° 43' 06.42"	531716.07	531716.07	52.77	104.58	3.56
C8	1247030.0456,531433.5198	2+90.27			96.756	206.940	S25° 27' 07.44"E	1246999.1360,531471.8997	1247040.3397,531385.3279	026° 47' 20.38"	027° 41' 13.77"	531342.10	531342.10	49.28	95.88	5.79
C9	1247047.8909,531349.9773	3+73.90			71.893	278.105	S19° 27' 48.12"E	1247040.3397,531385.3279	1247064.2282,531317.7316	014° 48' 41.74"	020° 36' 07.96"	531443.42	531443.42	36.15	71.69	2.34
C2	1247075.0163,531296.4387	4+33.52			44.797	52.408	S02° 22' 53.29"E	1247064.2282,531317.7316	1247066.0335,531274.3235	048° 58' 31.39"	109° 19' 37.79"	531294.05	531294.05	23.87	43.45	5.18
C3	1247053.7282,531244.0286	4+87.14			65.355	742.858	S19° 35' 09.03"W	1247066.0335,531274.3235	1247044.1323,531212.7697	005° 02' 26.75"	007° 42' 46.40"	530994.77	530994.77	32.70	65.33	0.72
C4	1247029.8760,531166.3293	5+68.38			92.580	123.698	S04° 22' 32.25"E	1247044.1323,531212.7697	1247051.0320,531122.5987	042° 52' 55.81"	046° 19' 08.03"	531176.47	531176.47	48.58	90.43	9.20
C5	1247064.3586,531095.0517	6+42.98			59.306	97.571	S08° 24' 13.45"E	1247051.0320,531122.5987	1247059.5667,531064.8280	034° 49' 33.42"	058° 43' 19.34"	531080.11	531080.11	30.60	58.40	4.69
C6	1247051.8178,531015.9544	7+21.17			96.592	180.393	S06° 19' 49.29"E	1247059.5667,531064.8280	1247070.0902,530969.9676	030° 40' 45.10"	031° 45' 41.66"	531036.58	531036.58	49.48	95.44	6.66
C7	1247071.4352,530966.5826	7+71.92			7.282	116.830	S23° 37' 20.39"E	1247070.0902,530969.9676	1247072.9884,530963.2881	003° 34' 17.11"	049° 02' 31.72"	531013.11	531013.11	3.64	7.28	0.06
L2			7+75.56	8+66.50	90.940		S25° 14' 28.94"E	1247072.9884,530963.2881	1247111.7682,530881.0310							

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LAND OWNER:  
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31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION



**CENTURY ENGINEERING**  
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PHONE: (443) 589-2400 FAX: (443) 589-2401

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

**ORCHARD RIDGE  
GEOMETRY SHEET**

	PROJECT NO:	151078.03
	SCALE:	1" = 40'
	DATE:	10/25/2017
	DESIGN:	AB/SH
	CHECK:	CL
	DWG NO:	GS-01 OF 02
	SHEET NO:	8 OF 45







GRADE CONTROL LOG STRUCTURES (GCLS)						
GCL #	FROM STA.	NORTHING, EASTING	OFFSET	TO STA.	NORTHING, EASTING	OFFSET
1	4+2.89	531328.5240, 1247070.0752	10.00 L	4+10.55	531335.7345, 1247107.3741	41.28 L
2	3+95.33	531319.6529, 1247031.8812	28.42 R	3+98.66	531323.9353, 1247050.1557	10.00 R
3	4+44.34	531276.8668, 1247110.0371	41.73 L	4+51.43	531274.4763, 1247076.7383	10.00 L
4	4+59.74	531273.0069, 1247056.3500	8.49 R	4+67.72	531271.5871, 124037.6342	25.40 R

CLAY CHANNEL BLOCK (CCB)					
CCB #	FROM STA.	OFFSET	TO STA.	OFFSET	QTY (CY)
1	2+26.50	28.78 R	2+29.19	7.82 R	33
2	3+45.58	30.34 R	3+54.29	8.98 R	36

WETLAND DEPRESSIONAL AREA (WDA)	
WDA #	FURNISHED CLAY, 3" DEPTH (SY)*
1	45.0

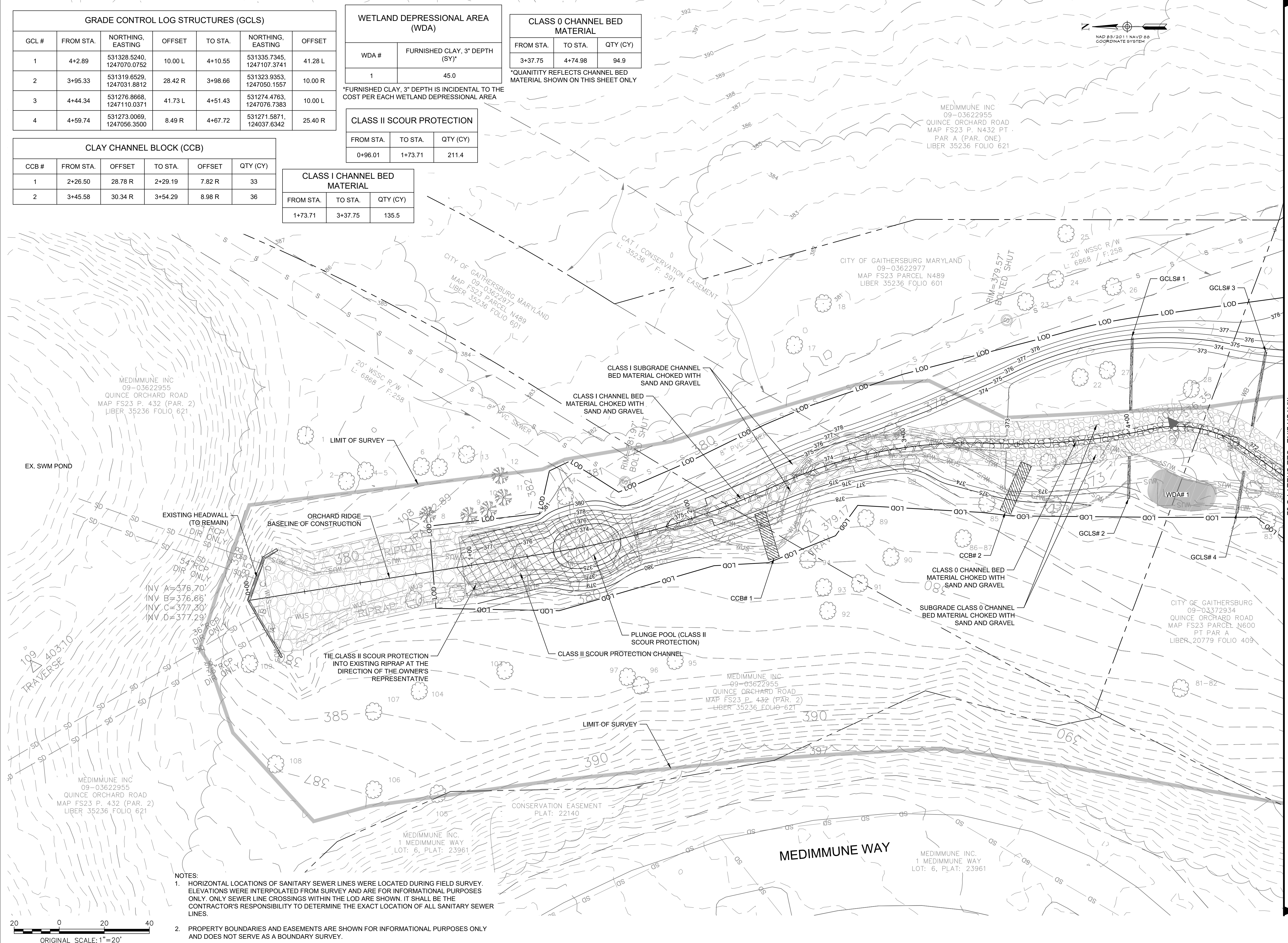
\*FURNISHED CLAY, 3" DEPTH IS INCIDENTAL TO THE COST PER EACH WETLAND DEPRESSIONAL AREA

CLASS II SCOUR PROTECTION		
FROM STA.	TO STA.	QTY (CY)
0+96.01	1+73.71	211.4

CLASS I CHANNEL BED MATERIAL		
FROM STA.	TO STA.	QTY (CY)
1+73.71	3+37.75	135.5

CLASS 0 CHANNEL BED MATERIAL		
FROM STA.	TO STA.	QTY (CY)
3+37.75	4+74.98	94.9

\*QUANTITY REFLECTS CHANNEL BED MATERIAL SHOWN ON THIS SHEET ONLY



- NOTES:
- HORIZONTAL LOCATIONS OF SANITARY SEWER LINES WERE LOCATED DURING FIELD SURVEY. ELEVATIONS WERE INTERPOLATED FROM SURVEY AND ARE FOR INFORMATIONAL PURPOSES ONLY. ONLY SEWER LINE CROSSINGS WITHIN THE LOD ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL SANITARY SEWER LINES.
  - PROPERTY BOUNDARIES AND EASEMENTS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT SERVE AS A BOUNDARY SURVEY.

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REVISIONS		
NO.	DATE	DESCRIPTION

PROPOSED FEATURES LEGEND

LIMIT OF DISTURBANCE — LOD —

PROPOSED MAJOR CONTOUR — 375 —

PROPOSED MINOR CONTOUR — 374 —

PROPOSED CLASS II SCOUR PROTECTION

CLASS 0 CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

CLASS 0 SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

CLASS I CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

CLASS I SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

GRADE CONTROL LOG STRUCTURE (GCLS)

CASCADE STEP POOL (CSP)

CLAY CHANNEL BLOCK (CCB)

WETLAND DEPRESSIONAL AREA (WDA)

**CENTURY ENGINEERING**  
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PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT**

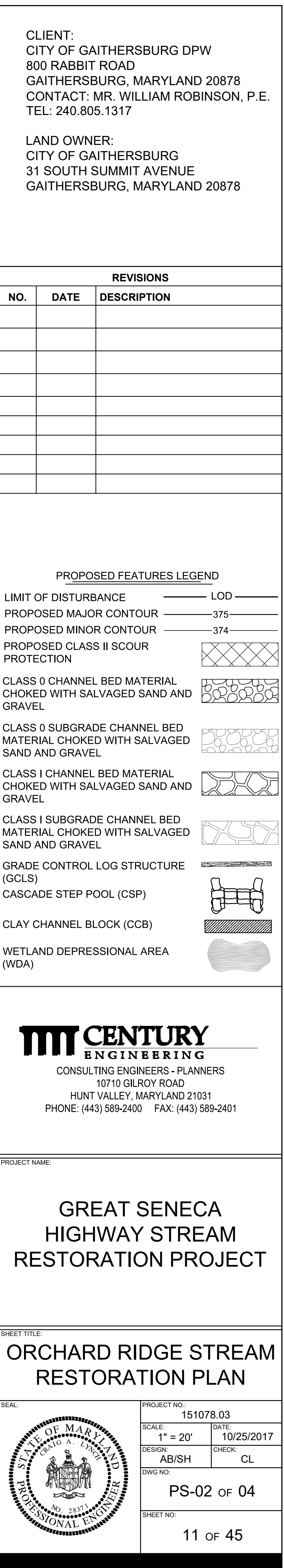
SHEET TITLE:

**ORCHARD RIDGE STREAM RESTORATION PLAN**

SEAL:

PROJECT NO.: 151078.03  
SCALE: 1" = 20'  
DATE: 10/25/2017  
DESIGN: AB/SH  
CHECK: CL  
DWG NO.: PS-01 of 04  
SHEET NO.: 10 of 45

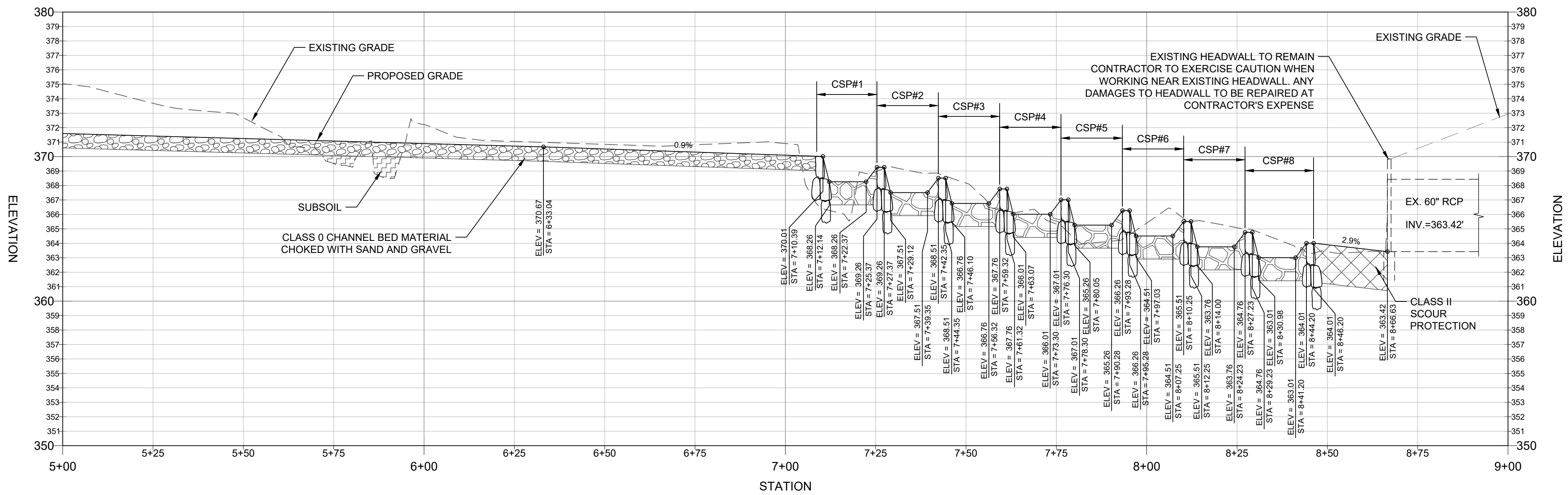
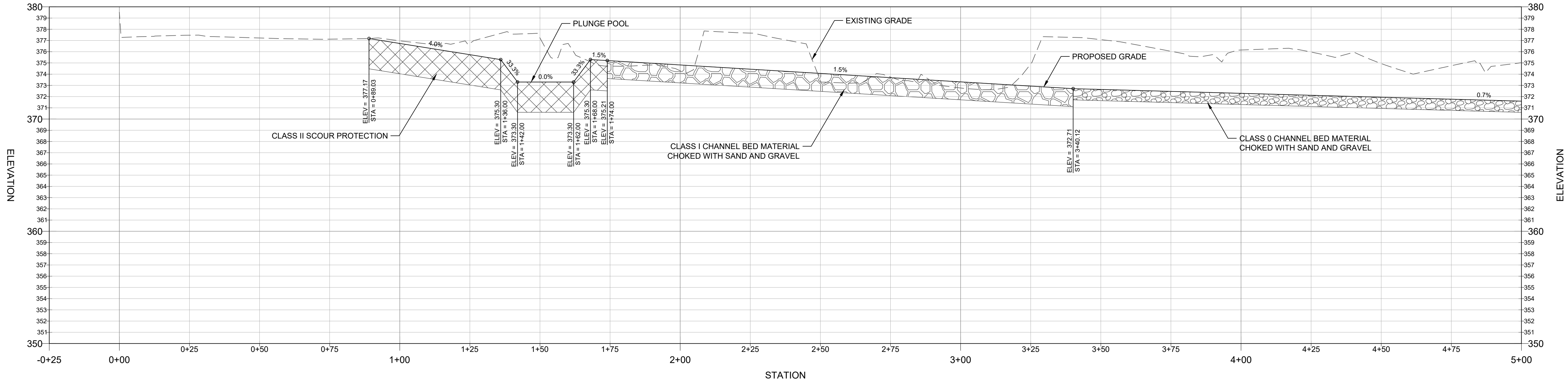






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**LEGEND**

CLASS 0 CHANNEL BED MATERIAL CHOKED WITH SAND AND GRAVEL

CLASS II SCOUR PROTECTION

CLASS I CHANNEL BED MATERIAL CHOKED WITH SAND AND GRAVEL

SUBSOIL

CASCADE STEP POOL

**CENTURY ENGINEERING**

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**ORCHARD RIDGE STREAM  
PROFILE**

SEAL:

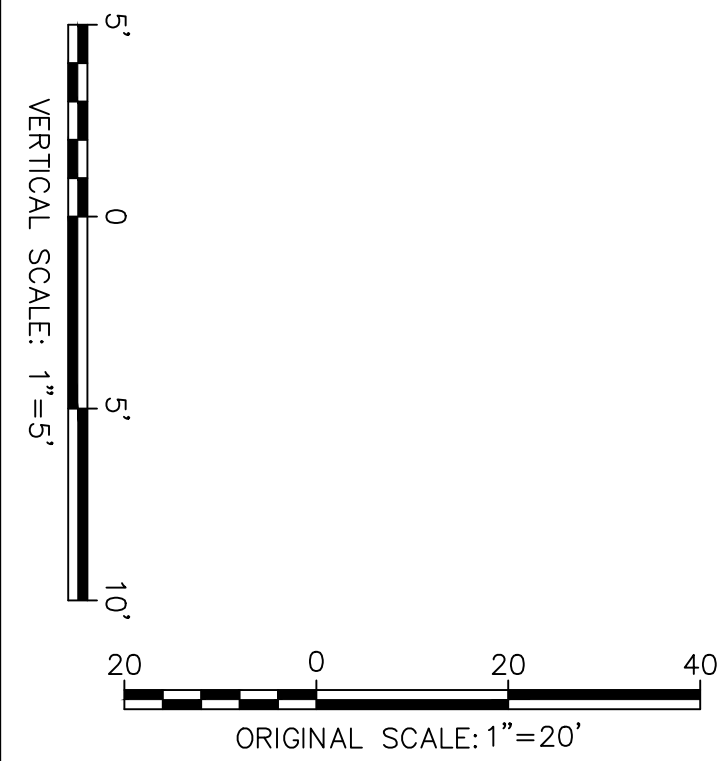
PROJECT NO.: 151078.03

SCALE: AS SHOWN DATE: 10/25/2017

DESIGN: AB/SH CHECK: CL

DWG NO.: PR-01 OF 02

SHEET NO.: 12 OF 45



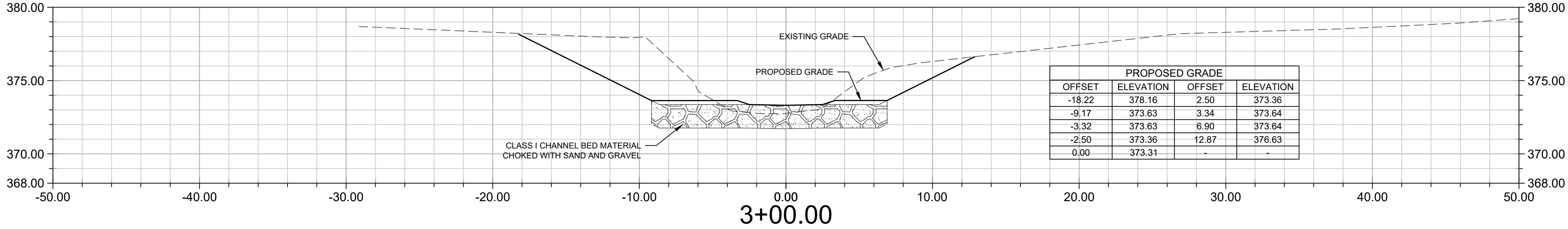
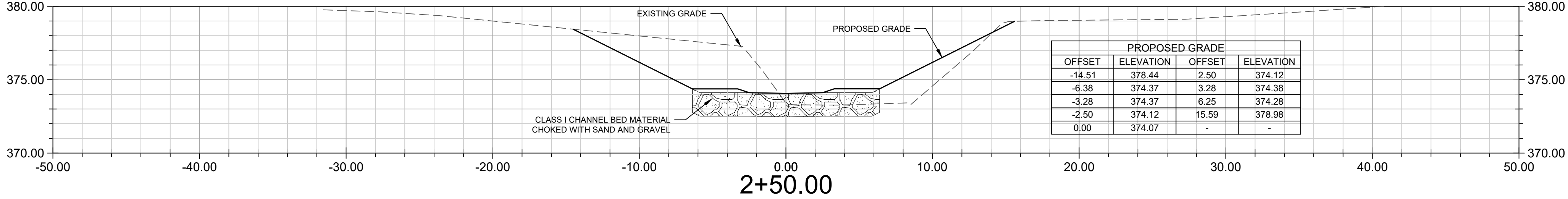
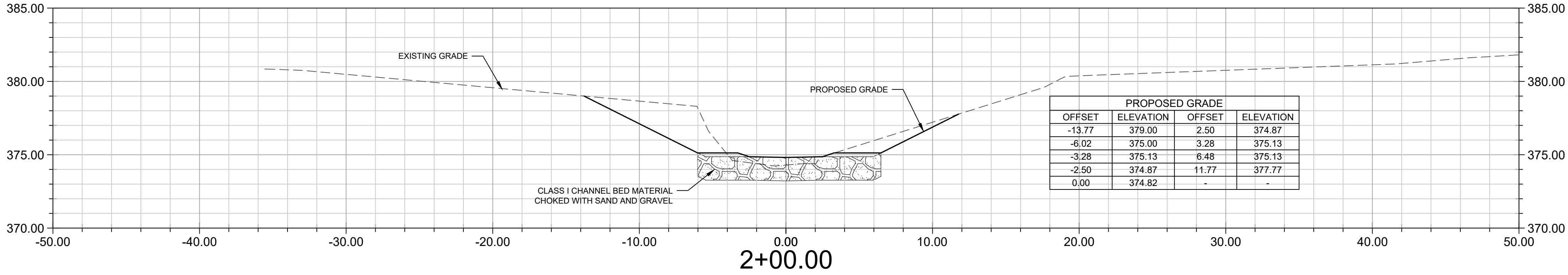
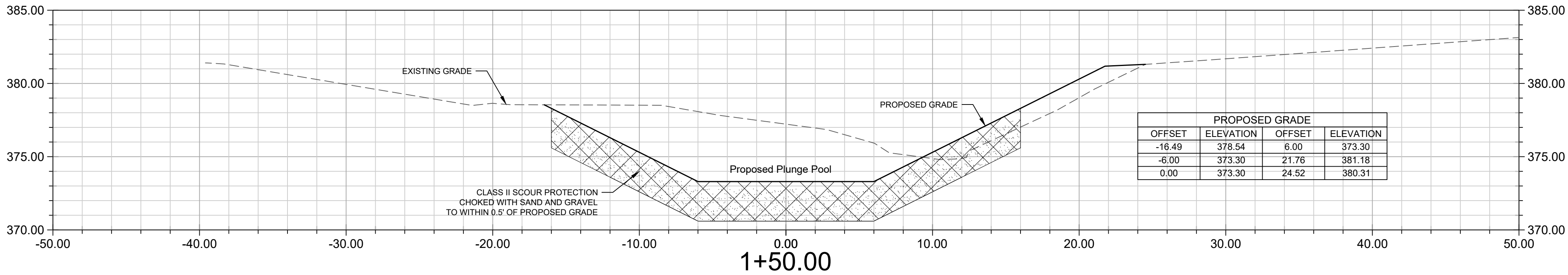
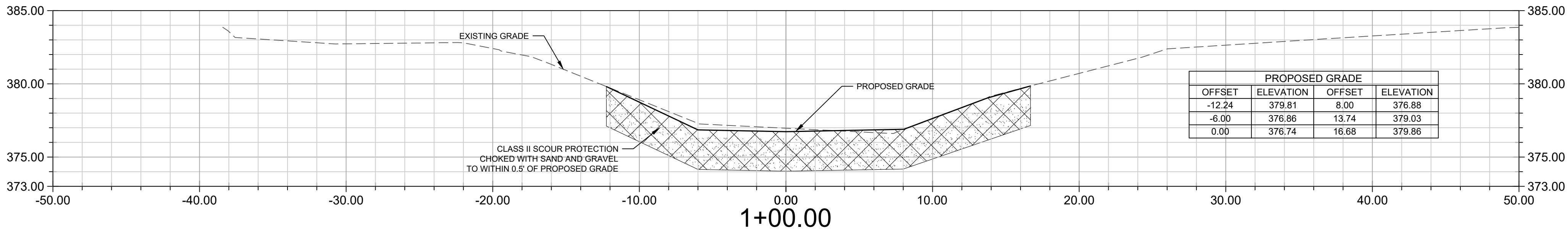


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REVISIONS

NO.	DATE	DESCRIPTION




5' 0 5' 10'  
HORIZONTAL & VERTICAL SCALE: 1"=5'

NOTE: ONLY FURNISHED STONE IS SHOWN IN CROSS-SECTIONS.  
SEE PLAN VIEW AND DETAIL SHEETS FOR INFORMATION AND  
EXACT LOCATIONS OF CLAY CHANNEL BLOCKS, GRADE CONTROL  
LOGS, FURNISHED TOPSOIL, AND SELECT BORROW.

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PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**ORCHARD RIDGE  
CROSS-SECTION SHEET**

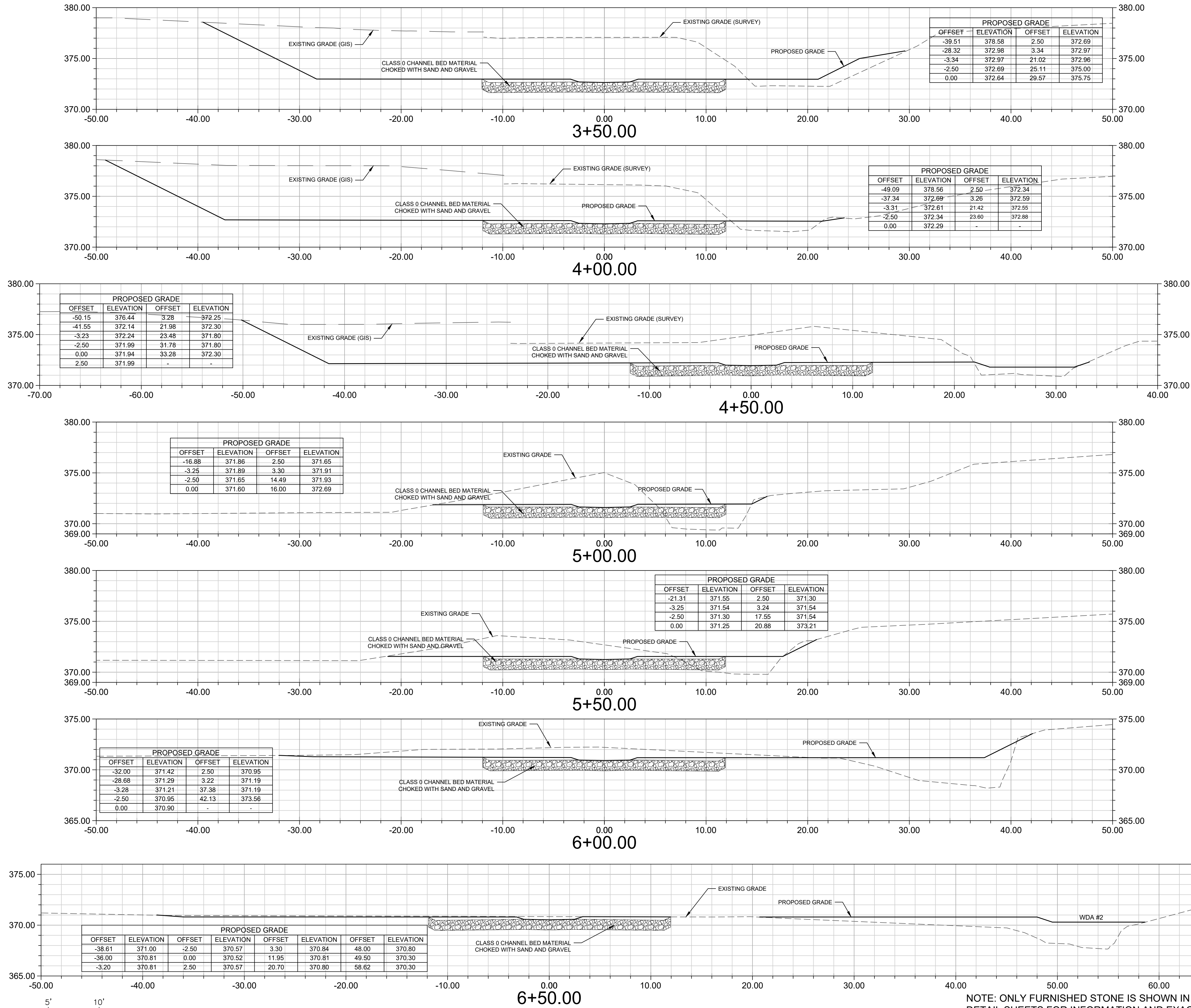
SEAL:  PROJECT NO.: 151078.03  
SCALE: 1" = 5' DATE: 10/25/2017  
DESIGN: AB/SH CHECK: CL  
DWG NO.: CS-01 OF 05  
SHEET NO.: 13 OF 45



CLIENT:  
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## GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT

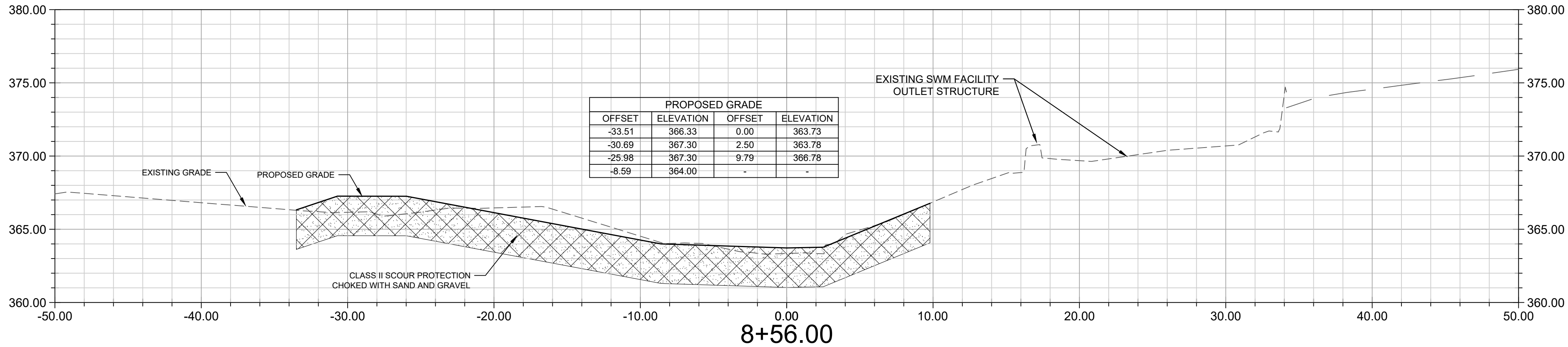
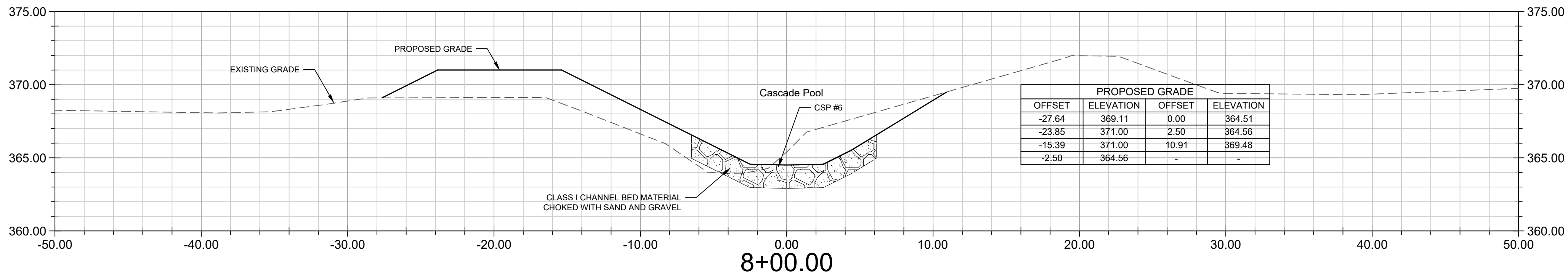
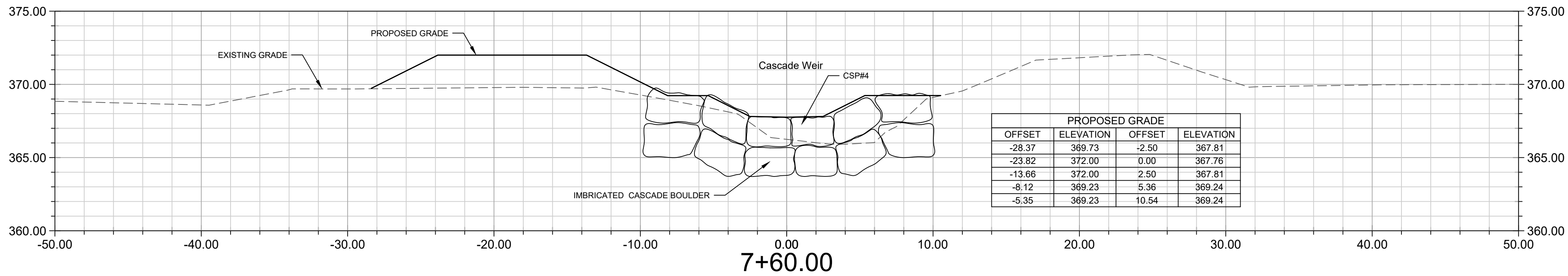
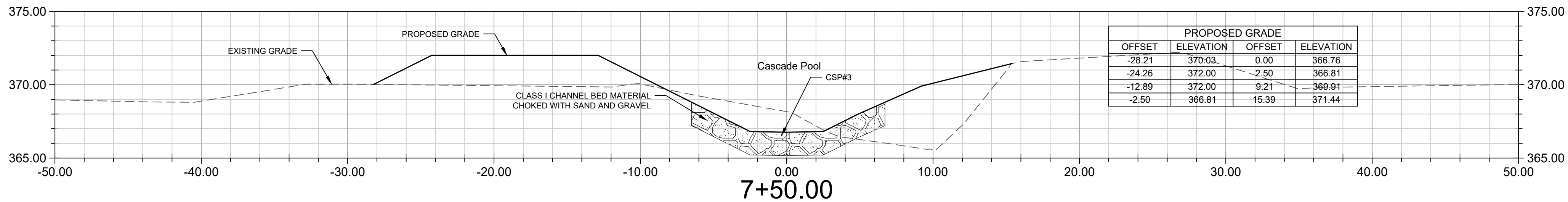
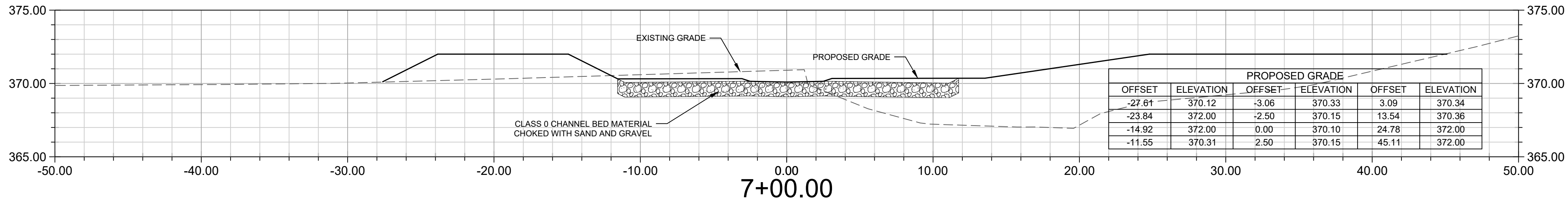
### ORCHARD RIDGE CROSS-SECTION SHEET

SEAL:

PROJECT NO: 151078.03  
SCALE: 1" = 5'  
DESIGN: AB/SH  
DWG NO: CS-02 OF 05  
SHEET NO: 14 OF 45

DATE: 10/25/2017  
CHECK: CL





5' 0 5' 10'  
HORIZONTAL & VERTICAL SCALE: 1"=5'

NOTE: ONLY FURNISHED STONE IS SHOWN IN CROSS-SECTIONS.  
SEE PLAN VIEW AND DETAIL SHEETS FOR INFORMATION AND  
EXACT LOCATIONS OF CLAY CHANNEL BLOCKS, GRADE CONTROL  
LOGS, FURNISHED TOPSOIL, AND SELECT BORROW.

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

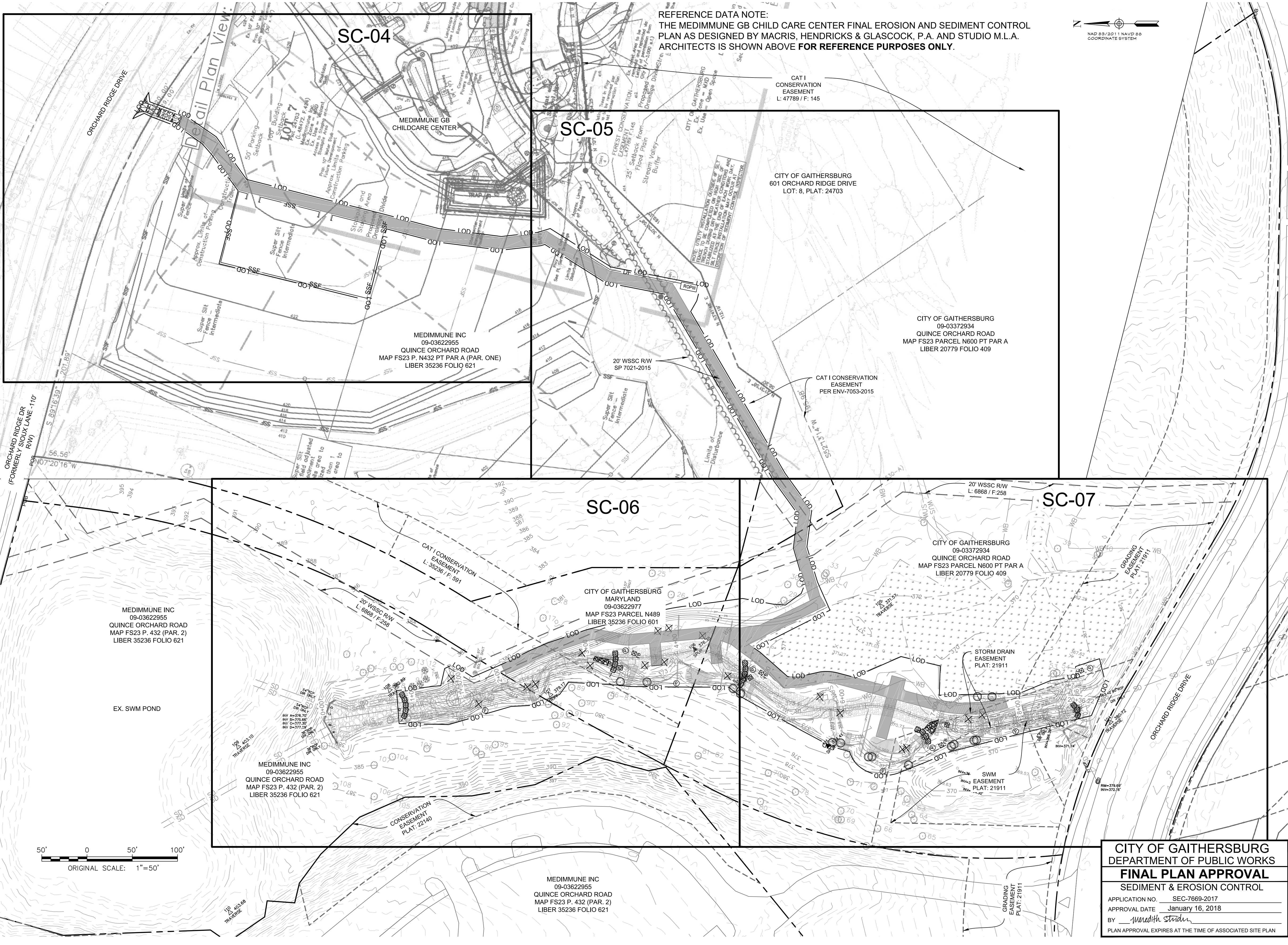
**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

ORCHARD RIDGE  
CROSS-SECTION SHEET

	PROJECT NO.: 151078.03
SCALE: 1" = 5'	DATE: 10/25/2017
DESIGN: AB/SH	CHECK: CL
DWG NO:	CS-03 OF 05
SHEET NO:	15 OF 45





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CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
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CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

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31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

TOTAL LIMIT OF DISTURBANCE:  
87,543 SF / 2.0 AC

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CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

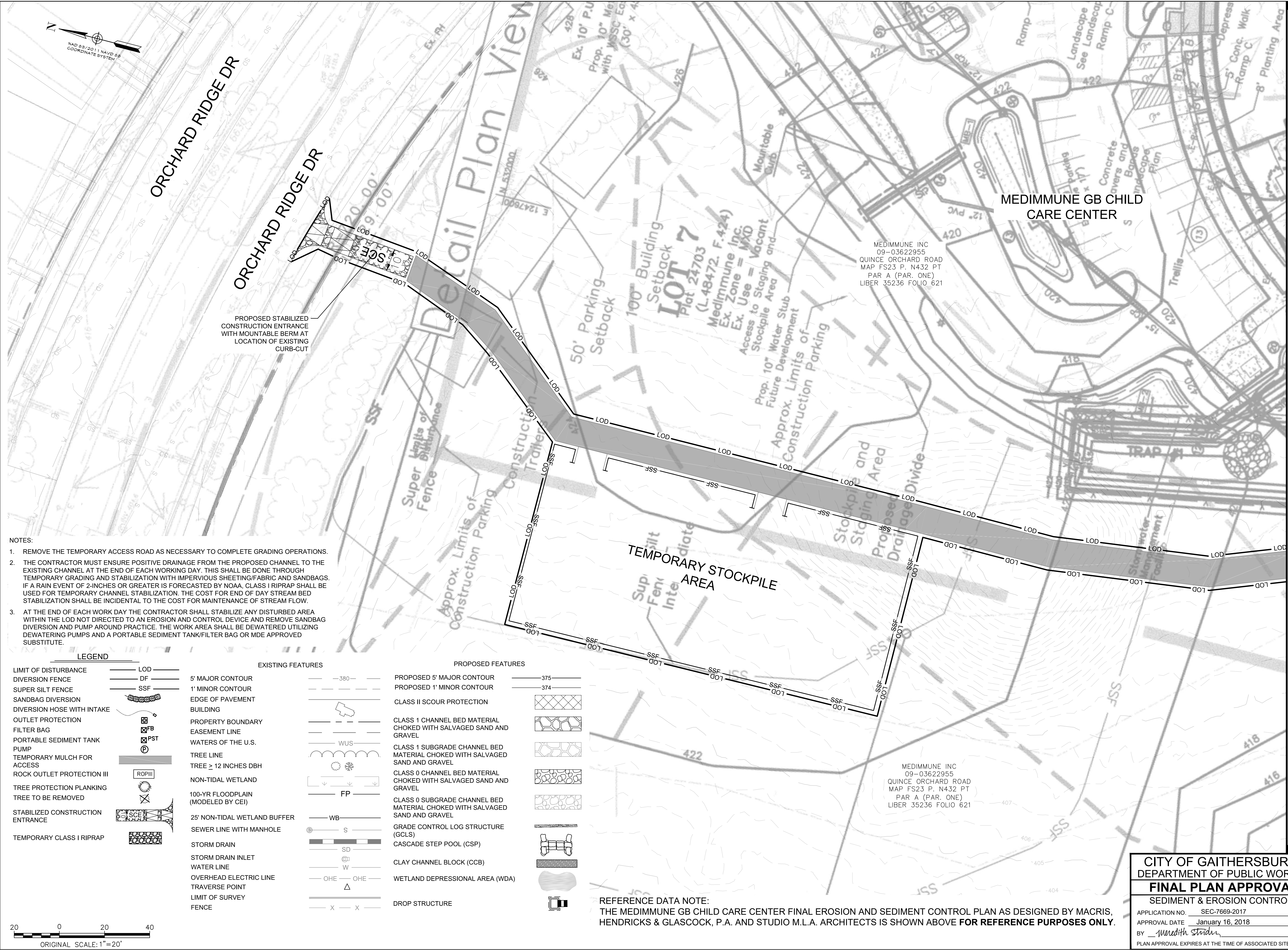
PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**ORCHARD RIDGE E&S  
OVERVIEW SHEET**

SEAL 	PROJECT NO.: 151078.03	
	SCALE: 1" = 50'	DATE: 10/25/2017
	DESIGN: AB/SH	CHECK: CL
	DWG NO.: SC-03 of 15	SHEET NO.: 16 of 45

**CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
FINAL PLAN APPROVAL**  
SEDIMENT & EROSION CONTROL  
APPLICATION NO. SEC-7669-2017  
APPROVAL DATE January 16, 2018  
BY *Meredith Strider*  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN





CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

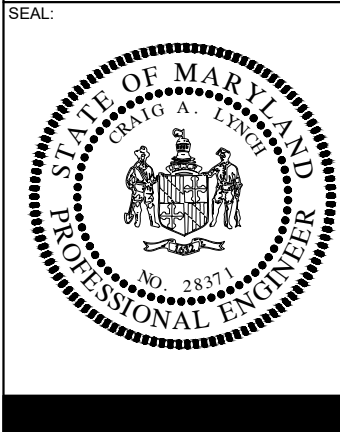
TOTAL LIMIT OF DISTURBANCE:  
87,543 SF / 2.0 AC

**CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**ORCHARD RIDGE E&S  
CONTROL PLAN**

SEAL:



PROJECT NO.: 151078.03  
SCALE: 1" = 20'  
DESIGN: AB/SH  
DWG NO.:  
APPROVAL DATE: January 16, 2018  
BY: Meredith Stender  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN

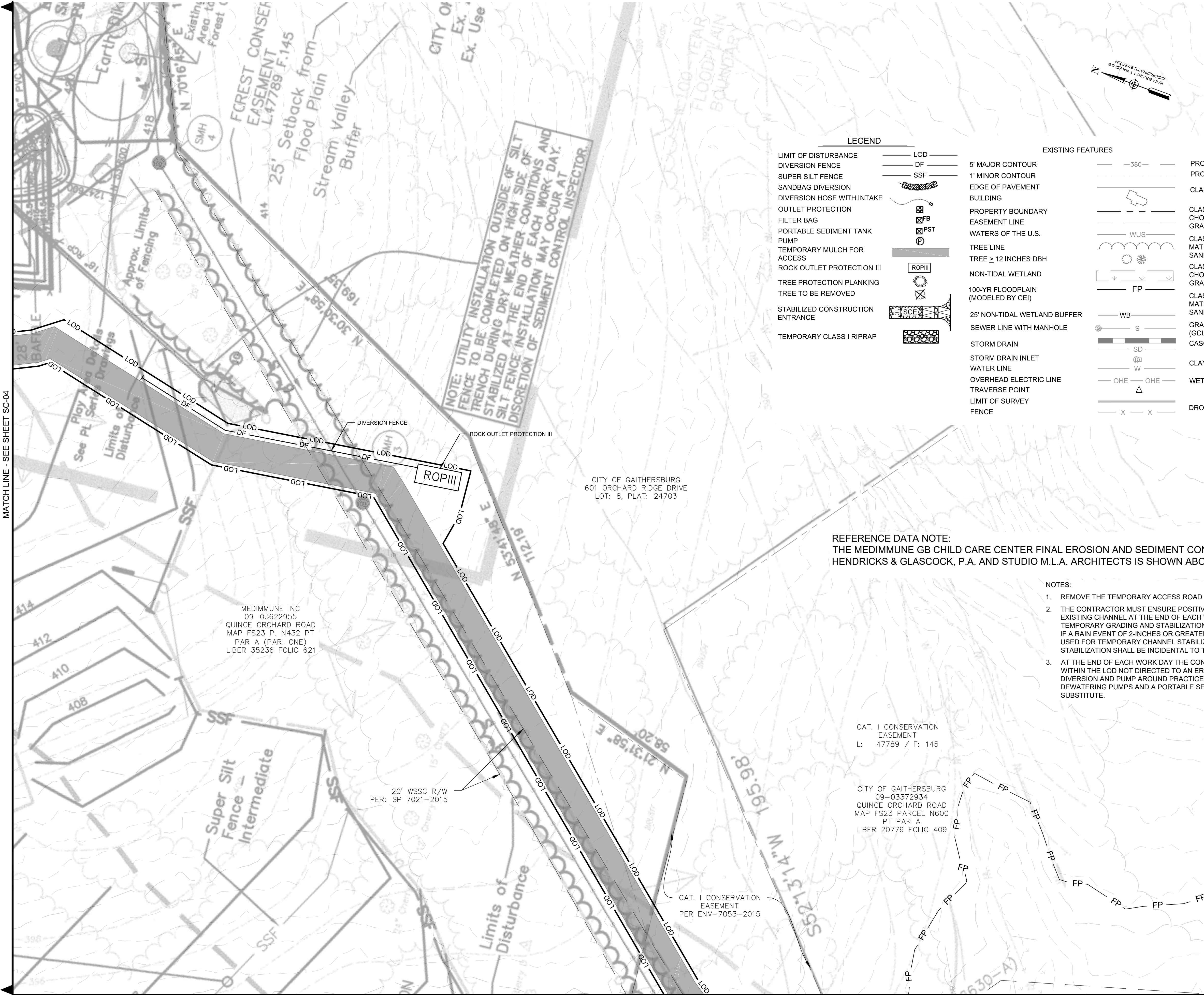
DATE: 10/25/2017  
CHECK: CL  
SC-04 OF 15  
SHEET NO.: 17 OF 45



MATCH LINE - SEE SHEET SC-04

MATCH LINE - SEE SHEET SC-06

MATCH LINE - SEE SHEET SC-07



NOTE: UTILITY INSTALLATION OUTSIDE OF SILT FENCE TO BE COMPLETED ON HIGH SIDE OF FENCE DURING DRY WEATHER CONDITIONS AND STABILIZED AT THE END OF EACH WORK DAY. DISCRETION OF SEDIMENT CONTROL INSPECTOR.

REFERENCE DATA NOTE:  
THE MEDIMMUNE GB CHILD CARE CENTER FINAL EROSION AND SEDIMENT CONTROL PLAN AS DESIGNED BY MACRIS, HENDRICKS & GLASCOCK, P.A. AND STUDIO M.L.A. ARCHITECTS IS SHOWN ABOVE FOR REFERENCE PURPOSES ONLY.

- NOTES:
1. REMOVE THE TEMPORARY ACCESS ROAD AS NECESSARY TO COMPLETE GRADING OPERATIONS.
  2. THE CONTRACTOR MUST ENSURE POSITIVE DRAINAGE FROM THE PROPOSED CHANNEL TO THE EXISTING CHANNEL AT THE END OF EACH WORKING DAY. THIS SHALL BE DONE THROUGH TEMPORARY GRADING AND STABILIZATION WITH IMPERVIOUS SHEETING/FABRIC AND SANDBAGS. IF A RAIN EVENT OF 2-INCHES OR GREATER IS FORECASTED BY NOAA, CLASS I RIPRAP SHALL BE USED FOR TEMPORARY CHANNEL STABILIZATION. THE COST FOR END OF DAY STREAM BED STABILIZATION SHALL BE INCIDENTAL TO THE COST FOR MAINTENANCE OF STREAM FLOW.
  3. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL STABILIZE ANY DISTURBED AREA WITHIN THE LOD NOT DIRECTED TO AN EROSION AND CONTROL DEVICE AND REMOVE SANDBAG DIVERSION AND PUMP AROUND PRACTICE. THE WORK AREA SHALL BE DEWATERED UTILIZING DEWATERING PUMPS AND A PORTABLE SEDIMENT TANK/FILTER BAG OR MDE APPROVED SUBSTITUTE.



CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
FINAL PLAN APPROVAL  
SEDIMENT & EROSION CONTROL

APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY Meredith Strider  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN

151078.03  
SCALE: 1" = 20'  
DESIGN: AB/SH  
DWG NO:

DATE: 10/25/2017  
CHECK: CL  
SC-05 of 15  
SHEET NO: 18 of 45

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

TOTAL LIMIT OF DISTURBANCE:  
87,543 SF / 2.0 AC

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PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE:

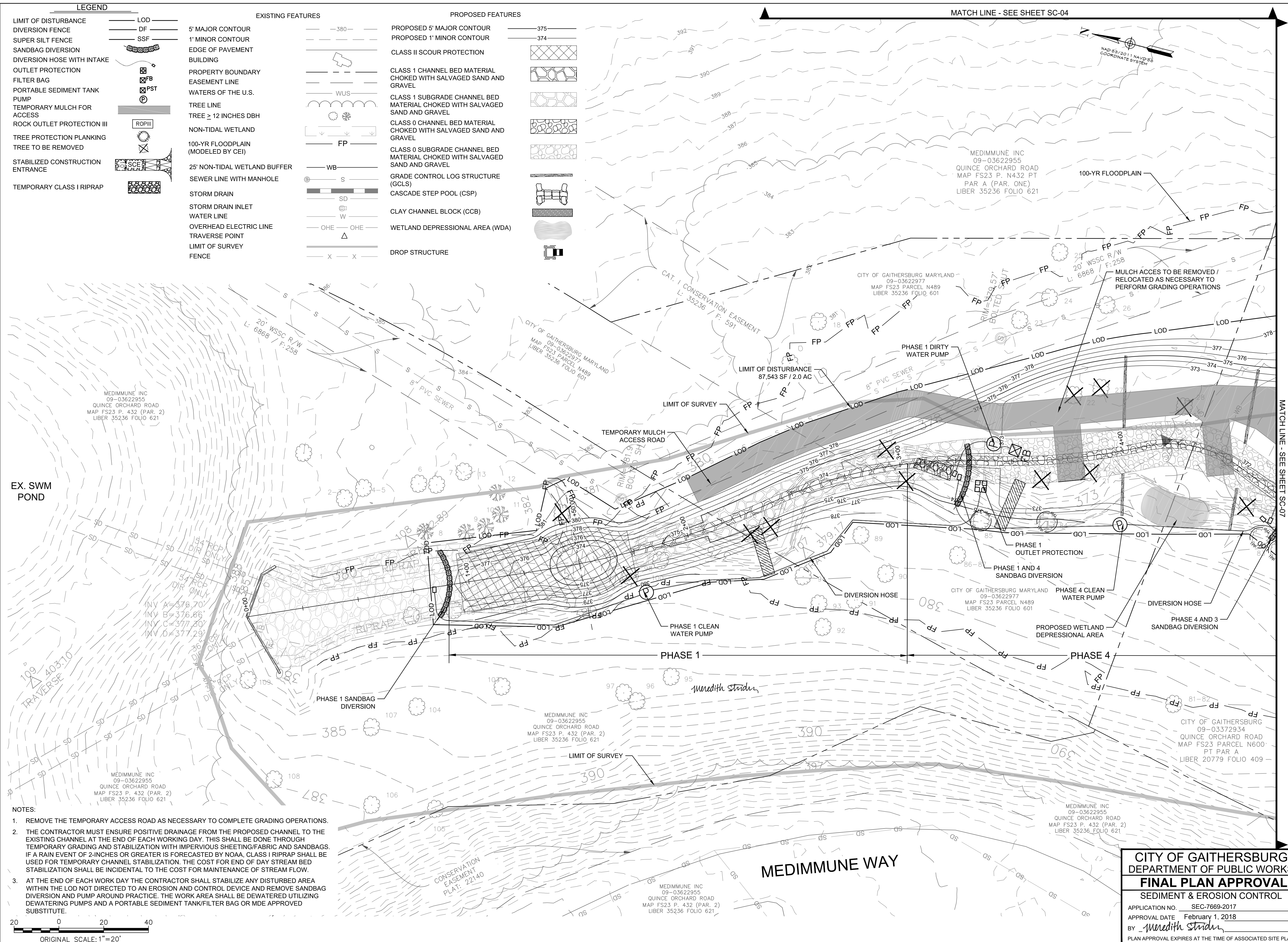
ORCHARD RIDGE E&S  
CONTROL PLAN

STATE OF MARYLAND  
PROFESSIONAL ENGINEER

151078.03  
SCALE: 1" = 20'  
DESIGN: AB/SH  
DWG NO:

DATE: 10/25/2017  
CHECK: CL  
SC-05 of 15  
SHEET NO: 18 of 45











City of Gaithersburg Department of Public Works  
STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. The permittee shall notify the City of Gaithersburg Permits and Inspections Division at 301-258-6338, 48 hours before commencing any land disturbing activity and shall be required to hold a pre-construction meeting between himself or his representative, and authorized representatives of the City.
2. The permittee must obtain inspection and approval by Planning and Code Enforcement at the following points:
- a. At the required pre-construction meeting.
  - b. Following installation of sediment control measures and prior to any other land disturbing activity.
  - c. During the installation of a sediment basin or stormwater management structure at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction is mandatory.
  - d. Prior to removal or modification of any sediment control devices.
  - e. Prior to final acceptance.
3. All erosion control measures are to be constructed and maintained in accordance with applicable published standards and specifications and the most current "Maryland Standards and Specifications for Soil Erosion and Sediment Control."
4. The permittee shall construct all erosion and sediment control measures per the approved plan and construction sequence, shall have them inspected and approved by the City Inspector prior to beginning any other land disturbances, shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measures without prior permission from City Inspector.
5. Any request for changes to the sediment control plan or sequence of construction must be submitted to the Sediment Control Inspector and approved before implementing changes. Major changes will require a plan revision, including approval by the Montgomery Soil Conservation District.
6. The permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.
7. The permittee shall inspect daily and maintain continuously in effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from Department of Planning and Code Enforcement.
8. All sediment basins, trap embankments, swales, perimeter dikes and permanent slopes steeper or equal to 3:1 shall be stabilized with sod, seed and anchored straw mulch, or other approved stabilization measures, within three (3) calendar days of establishment. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization. Restabilization or overseeding will be required, if necessary.
9. The permittee shall apply sod, seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas within 7 calendar days after stripping and grading activities have ceased on that area. Maintenance shall be performed as necessary to ensure continued stabilization. Active construction areas such as borrow or stockpile areas, roadway improvements, and areas within 50 feet of a building under construction may be exempted from this requirement, provided that erosion and sediment control measures are installed and maintained to protect those areas.
10. Prior to removal of sediment control measures the permittee shall stabilize all contributory disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mulch. Wood fiber mulch may only be used in seeding season to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within 7 calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15th.
11. The site work, materials, approved SC and SVM plans and any required test reports shall be available at the site for inspection by duly authorized officials of the City of Gaithersburg.
12. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or installing mechanical devices to lower the water downslope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.
13. Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting or by other approved stabilization measures.
14. Temporary sediment control devices shall be removed, with permission of the City Inspector, within (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. If establishment is not full and uniform as determined by the Sediment Control Inspector, overseeding will be required. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
15. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in areas that are not to be maintained provided that those areas are indicated on the erosion control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.
16. The permittee shall install splashblock at the bottom of each downspout unless the downspout is connected by a drain line to an acceptable outlet.
17. All water pumped from excavation during construction shall be pumped either to sediment tanks and/or sediment traps. No water will be pumped to the storm drain system. Dewatering shall be performed in accordance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
18. For finished grading, the permittee shall provide adequate gradients so as to: (1) prevent water from standing on the surface of lawns more than 24 hours after the end of a rainfall, except in designated courses and swale flow areas which may drain as long as 48 hours after the end of a rainfall, and (2) provide positive drainage away from all building foundations or openings.
19. Sediment traps and basins are not permitted within 20 feet of a building which is existing or under construction. No building may be constructed within 20 feet of a sediment trap or basin.
20. All inlets in non-swamp areas shall have asphalt berms installed at the time of base paving establishment.
21. The sediment control inspector has the option of requiring additional sediment control measures, if deemed necessary.
22. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.
23. Vegetative stabilization shall be performed in accordance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
24. Temporary sediment trap(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to a point one half (1/2) the depth between the outlet crest and the bottom of the trap.
25. Sediment removed from traps shall be placed and stabilized in approved areas in such a manner that it does not foul existing or proposed storm drainage systems or areas already stabilized. Sediment shall not be placed within a flood plain or wetland.
26. All sediment basins and traps must be surrounded with a welded wire safety fence. The fence must be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height, with a minimum of 14-gauge wire. Safety fence must be maintained in good condition at all times.
27. No excavation in the area of existing utilities is permitted unless their location has been determined. Call Miss Utility at 1-800-257-7777 48 hours prior to the start of work.
28. Off-site spoil or borrow areas must have approved SC plans.
29. Protect all trees to be preserved during construction in accordance with the approved Forest Conservation Plan and Forest Stand Delineation.
30. Permittee is responsible for all actions of subcontractors, including repairing damages of sediment control devices.

ORCHARD RIDGE STREAM RESTORATION PROJECT  
SEQUENCE OF CONSTRUCTION

PHASE 1:

1. 72 HOURS PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR IS TO HAVE ALL LIMIT OF DISTURBANCE (LOD) AND SEDIMENT AND EROSION CONTROL DEVICES STAKED OUT IN THE FIELD FOR REVIEW AND APPROVAL BY THE CITY. CLEARING LIMITS SHALL BE ROUGH STAKED IN ORDER TO FACILITATE LOCATION FOR TRENCHING AND FENCING INSTALLATION. CONTACT MISS UTILITY AND THE CITY OF GAITHERSBURG TO HAVE ALL UTILITIES MARKED. THIS STREAM HAS BEEN DESIGNATED AS A MARYLAND USE CLASS I-P AND IS THEREFORE SUBJECT TO STREAM CLOSURE FROM MARCH 1 TO JUNE 15, INCLUSIVE, DURING ANY YEAR. NO IN STREAM WORK CAN BE DONE DURING THIS PERIOD.
2. PRIOR TO ANY CLEARING OR GRADING OR SEDIMENT EROSION PROTECTION INSTALLATION MEASURES, THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH CITY PROJECT MANAGER (240-805-1317); THE FOREST INSPECTOR; AND WSSC (301-206-4004). THE DESIGN PROJECT MANAGER; THE CITY SEDIMENT CONTROL/DPW SEDIMENT CONTROL INSPECTOR. ALL PARTIES REQUIRE SEVEN DAYS NOTICE. NO CLEARING OR GRADING SHALL BEGIN IN AREAS WHERE TREE TREATMENT AND PRESERVATION MEASURES HAVE NOT BEEN COMPLETED. CITY SEDIMENT CONTROL/DPW SEDIMENT CONTROL INSPECTOR MUST APPROVE ALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO STARTING WORK.
3. MANUALLY INSTALL HIGH VISIBILITY ORANGE CONSTRUCTION FENCE ALONG THE LIMITS OF DISTURBANCE AND TREE PROTECTION PLANKING (SEE EROSION & SEDIMENT CONTROL PLAN).
4. CLEAR FOR AND INSTALL THE TEMPORARY MULCH FOR ACCESS, STABILIZED CONSTRUCTION ENTRANCE, SUPER SILT FENCE, AND STOCKPILE AREA.
5. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 0+89 TO 3+00. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 1 STREAM CONSTRUCTION.
6. CONSTRUCT THE CLASS II SCOUR PROTECTION, PLUNGE POOL, AND PROPOSED STREAM CHANNEL AND ASSOCIATED FLOODPLAIN BETWEEN STATIONS 0+89 to 3+00, WORKING FROM UPSTREAM TO DOWNSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE PROPOSED CHANNEL TO THE EXISTING CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS. A MAXIMUM OF 200 LINEAR FEET PER DAY SHALL BE DISTURBED.
7. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
8. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND OWNER'S REPRESENTATIVE, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 1, WITH THE PERMISSION OF THE INSPECTOR AND THE OWNER'S REPRESENTATIVE, PROCEED TO PHASE 2.

PHASE 2

1. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 8+66 TO 7+10. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 2 STREAM CONSTRUCTION.
2. CONSTRUCT THE CLASS II SCOUR PROTECTION, CASCADE STEP-POOLS (CSP# 8 THROUGH CSP#1), AND BERM BETWEEN STATIONS 8+66 TO 7+10, WORKING FROM DOWNSTREAM TO UPSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE EXISTING CHANNEL TO THE PROPOSED CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS. A MAXIMUM OF 200 LINEAR FEET PER DAY SHALL BE DISTURBED.
3. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
4. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND DESIGNER, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 2, WITH THE PERMISSION OF THE INSPECTOR AND THE OWNER'S REPRESENTATIVE, PROCEED TO PHASE 3.

PHASE 3

1. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 7+10 TO 5+00. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 3 STREAM CONSTRUCTION.
2. CONSTRUCT THE PROPOSED STREAM CHANNEL AND ASSOCIATED FLOODPLAIN, AND BERM BETWEEN STATIONS 7+10 TO 5+00, WORKING FROM DOWNSTREAM TO UPSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE EXISTING CHANNEL TO THE PROPOSED CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND

- REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS. A MAXIMUM OF 200 LINEAR FEET PER DAY SHALL BE DISTURBED.
3. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
4. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND OWNER'S REPRESENTATIVE, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 3, WITH THE PERMISSION OF THE INSPECTOR AND OWNER'S REPRESENTATIVE, PROCEED TO PHASE 4.

PHASE 4

1. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 3+00 TO 5+00. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 4 STREAM CONSTRUCTION.
2. CONSTRUCT THE PROPOSED STREAM CHANNEL AND ASSOCIATED FLOODPLAIN BETWEEN STATIONS 3+00 TO 5+00, WORKING FROM UPSTREAM TO DOWNSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE EXISTING CHANNEL TO THE PROPOSED CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS. A MAXIMUM OF 200 LINEAR FEET PER DAY SHALL BE DISTURBED.
3. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
4. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND DESIGNER, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. PLANT TREES, SHRUBS, AND PLUGS, AND SEED ALL REMAINING AREAS PER THE LANDSCAPE PLAN.
8. CONDUCT A PUNCH LIST WALK-THROUGH WITH THE CITY PROJECT MANAGER, THE DESIGN PROJECT MANAGER, THE CITY SEDIMENT CONTROL INSPECTOR, AND THE OWNER'S REPRESENTATIVE AND CORRECT ANY OUTSTANDING ITEMS.
9. WITH WRITTEN APPROVAL FROM THE CITY SEDIMENT CONTROL INSPECTOR AND APPROVAL FROM THE OWNER'S REPRESENTATIVE, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES.

BEST MANAGEMENT PRACTICES FOR WORKING IN  
NONTIDAL WETLANDS, WETLAND BUFFERS,  
WATERWAYS, AND 100-YEAR FLOODPLAINS

1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
2. Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
3. Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
4. Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
5. Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
6. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
7. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. **Kentucky 31 fescue shall not be utilized in wetland or buffer areas.** The area should be seeded and mulched to reduce erosion after construction activities have been completed.
8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
9. To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:

Use I-P waters: In-stream work shall not be conducted during the period  
March 1 through June 15, inclusive, during any year.

10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878


REVISIONS		
NO.	DATE	DESCRIPTION

**MM CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

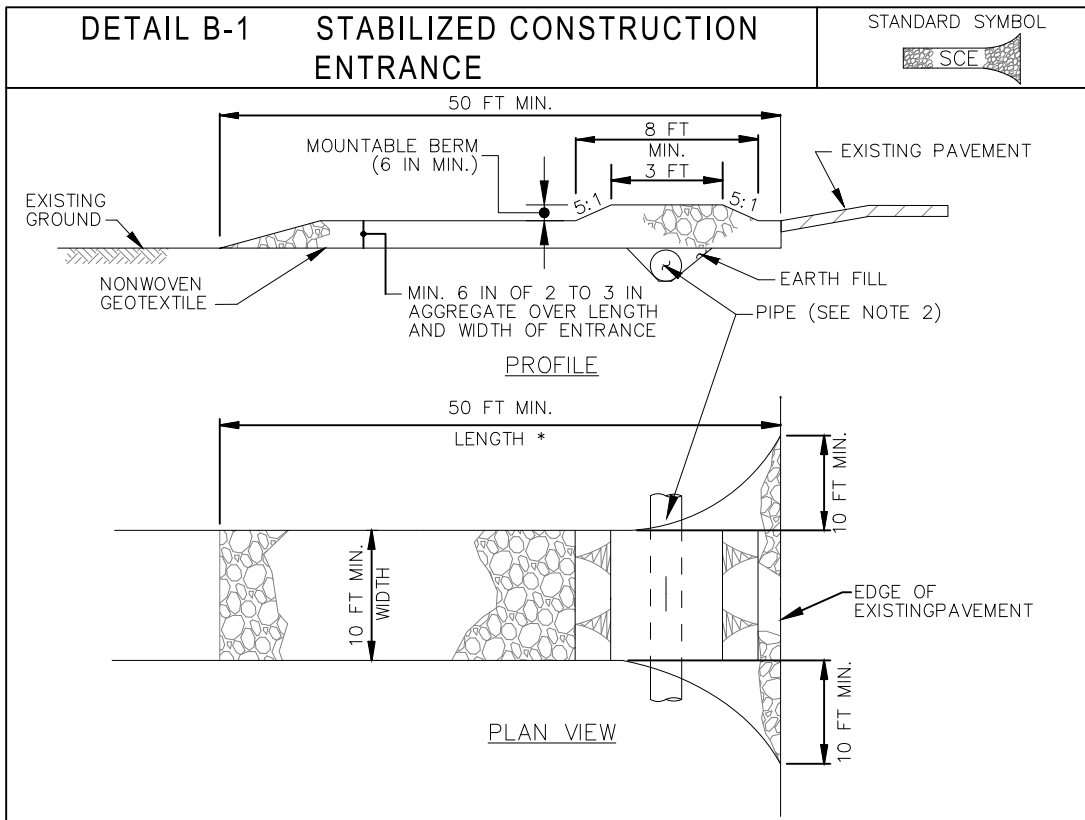
GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE  
ORCHARD RIDGE E&S  
CONTROL NOTES

SEAL:	PROJECT NO.: 151078.03
	SCALE: N.T.S. DATE: 10/25/2017
	DESIGN: AB/SH CHECK: CL
	DWG NO: SC-08 of 15
	SHEET NO: 21 of 45

CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
**FINAL PLAN APPROVAL**  
SEDIMENT & EROSION CONTROL  
APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY Meredith Strider  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN





CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (450 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PILES AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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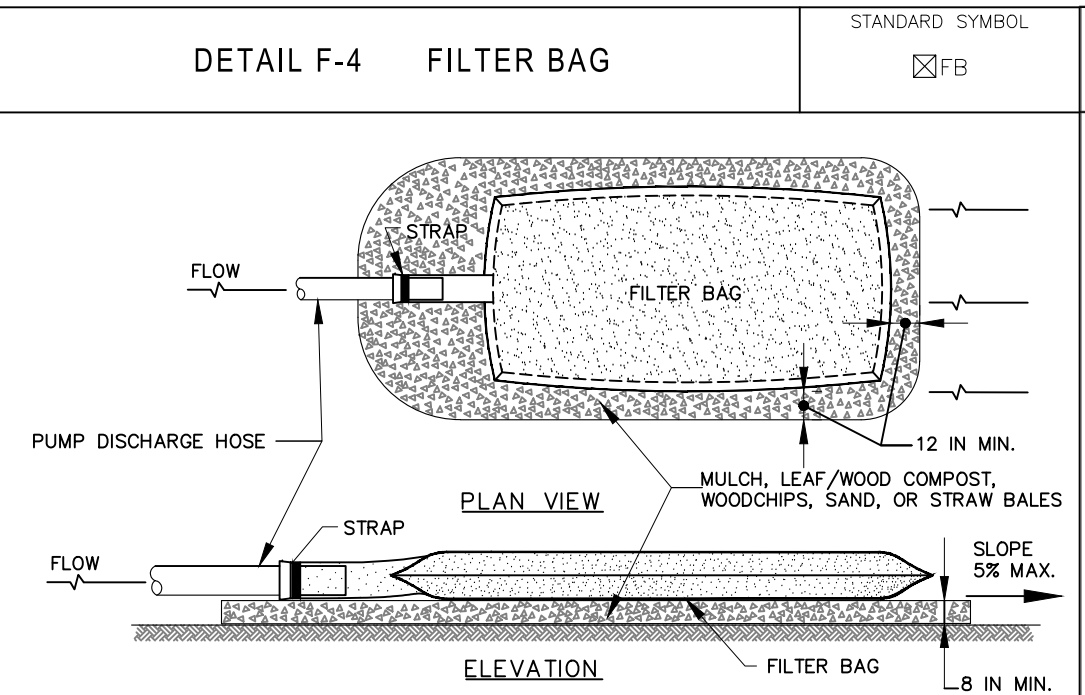
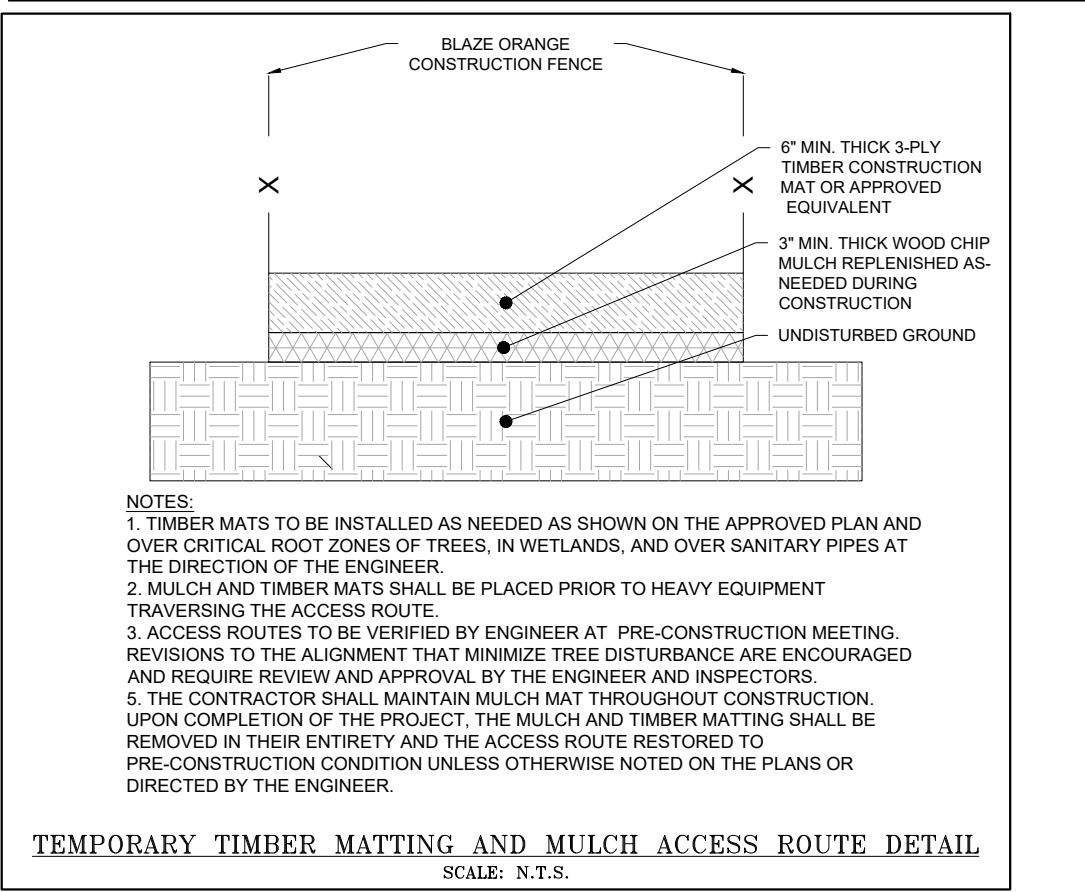


CONSTRUCTION SPECIFICATIONS

1. INSTALL 2 3/4 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/4 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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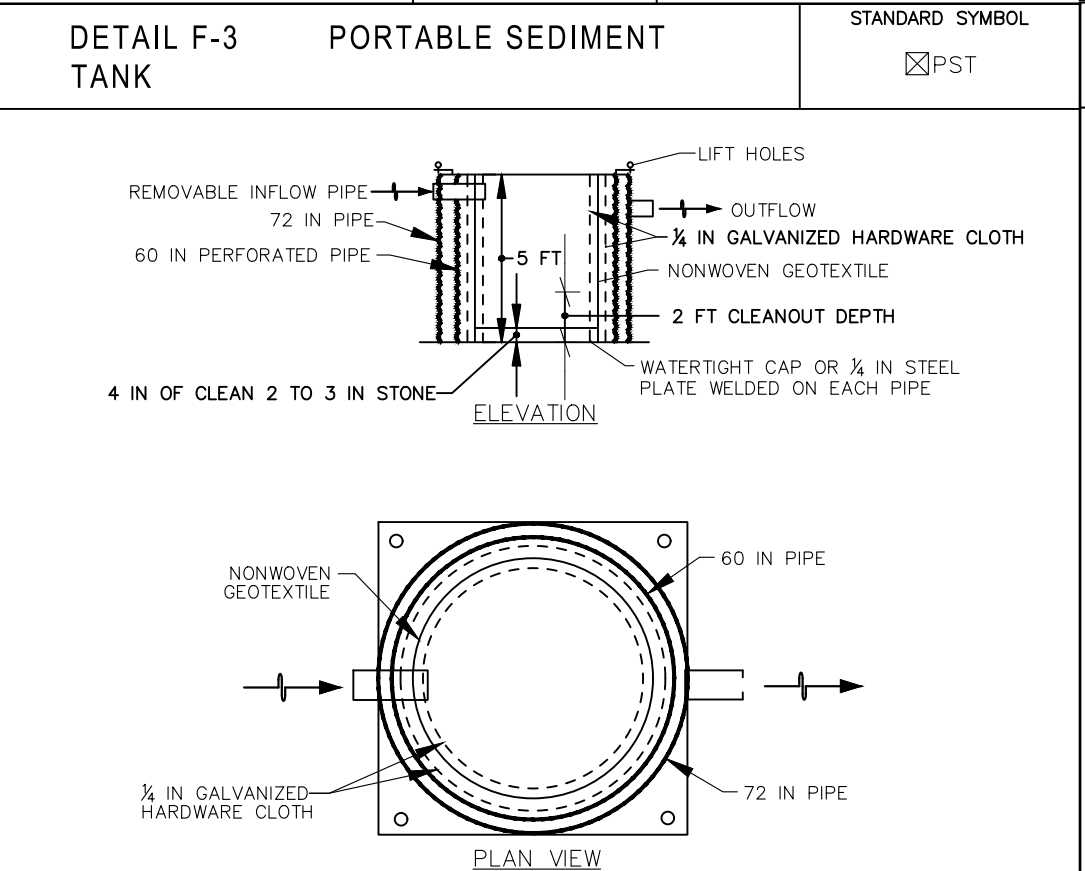
CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS, AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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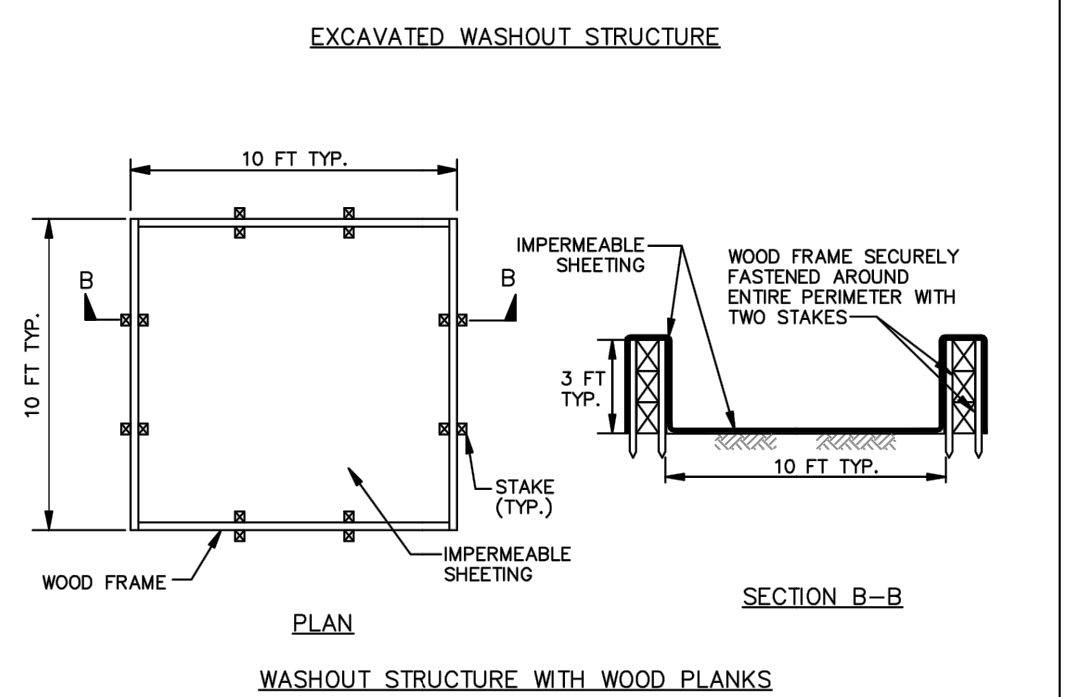
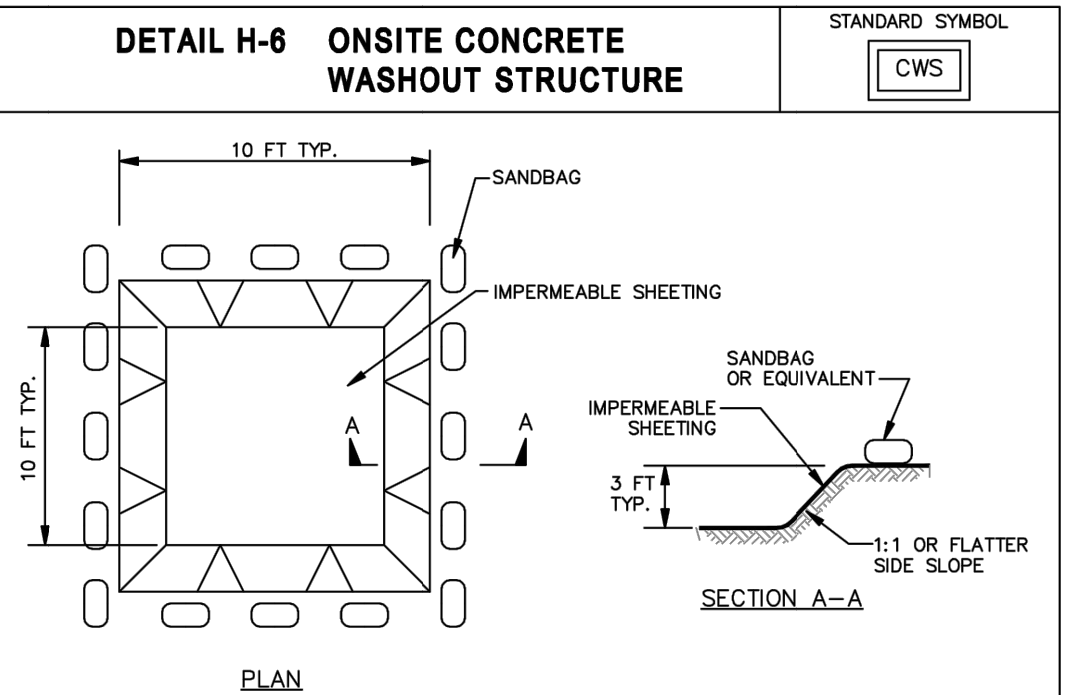
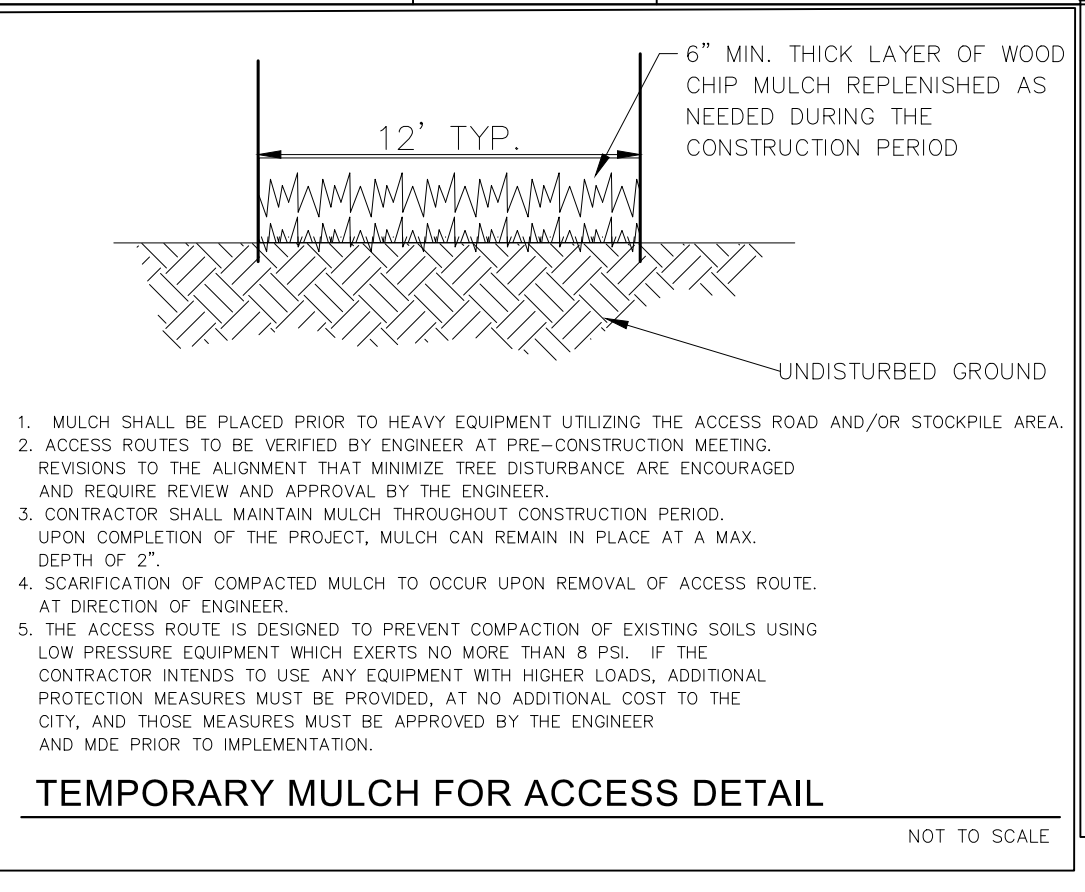


CONSTRUCTION SPECIFICATIONS

1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERLAPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, 1/4 INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE.
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

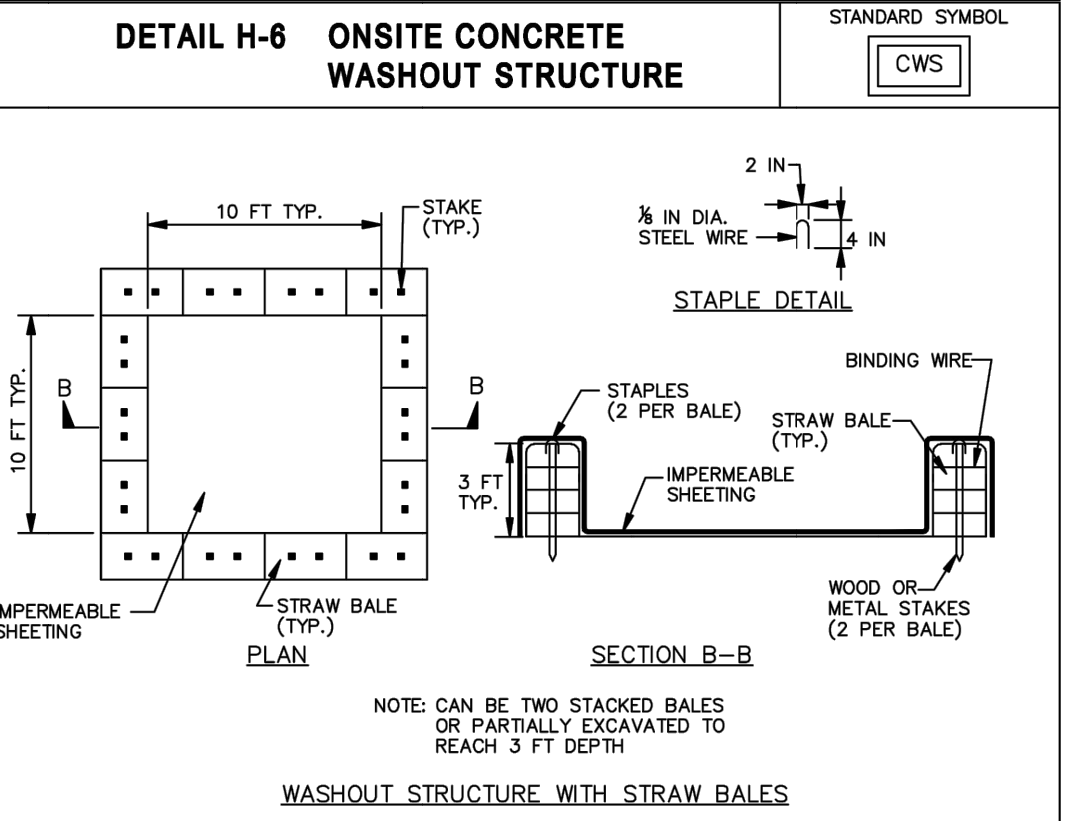
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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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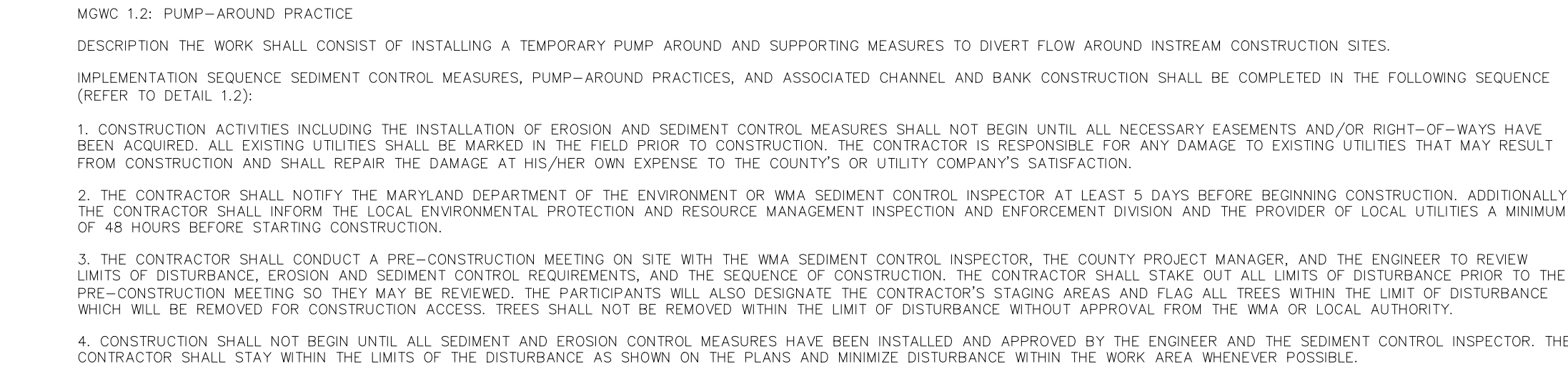
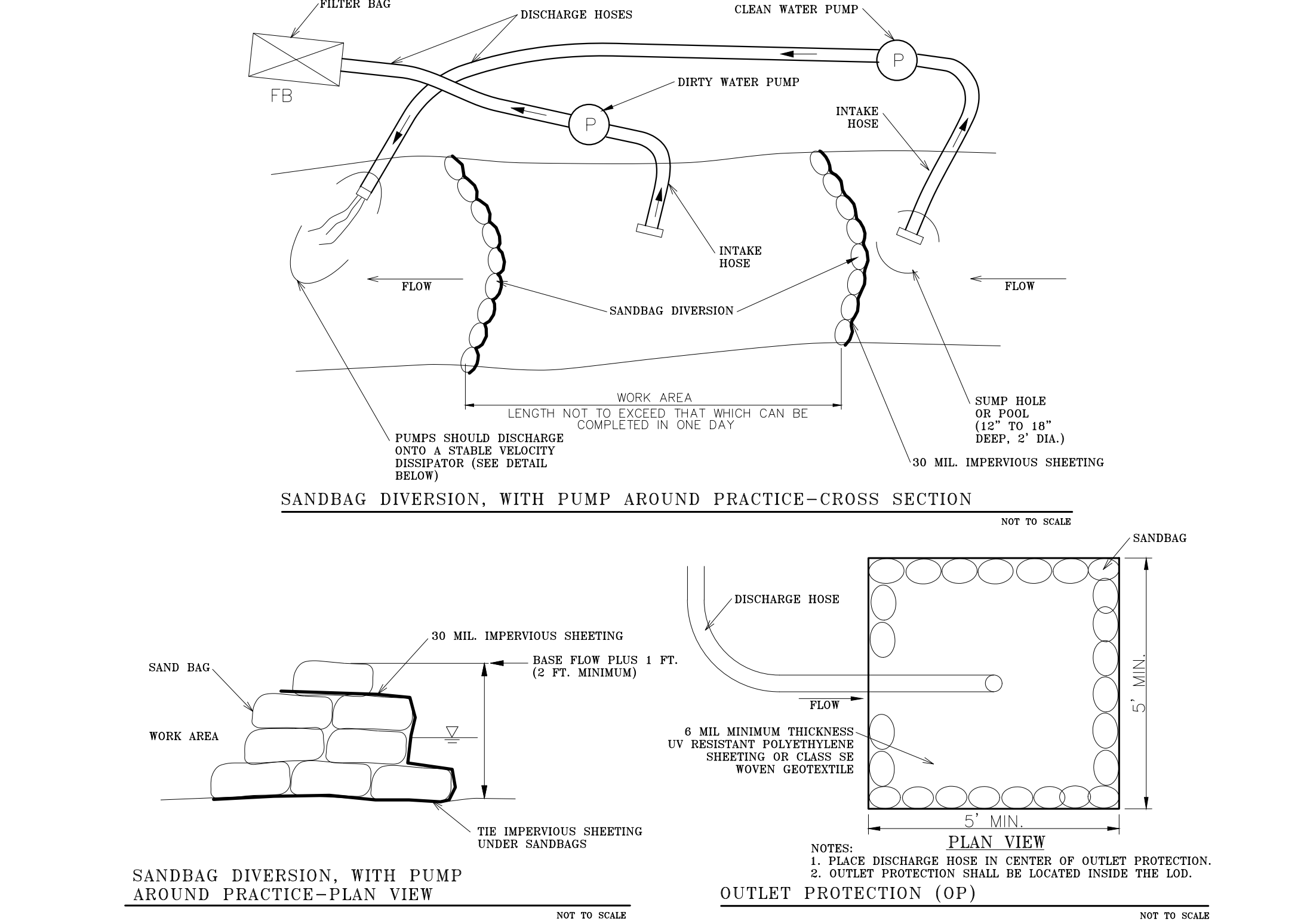
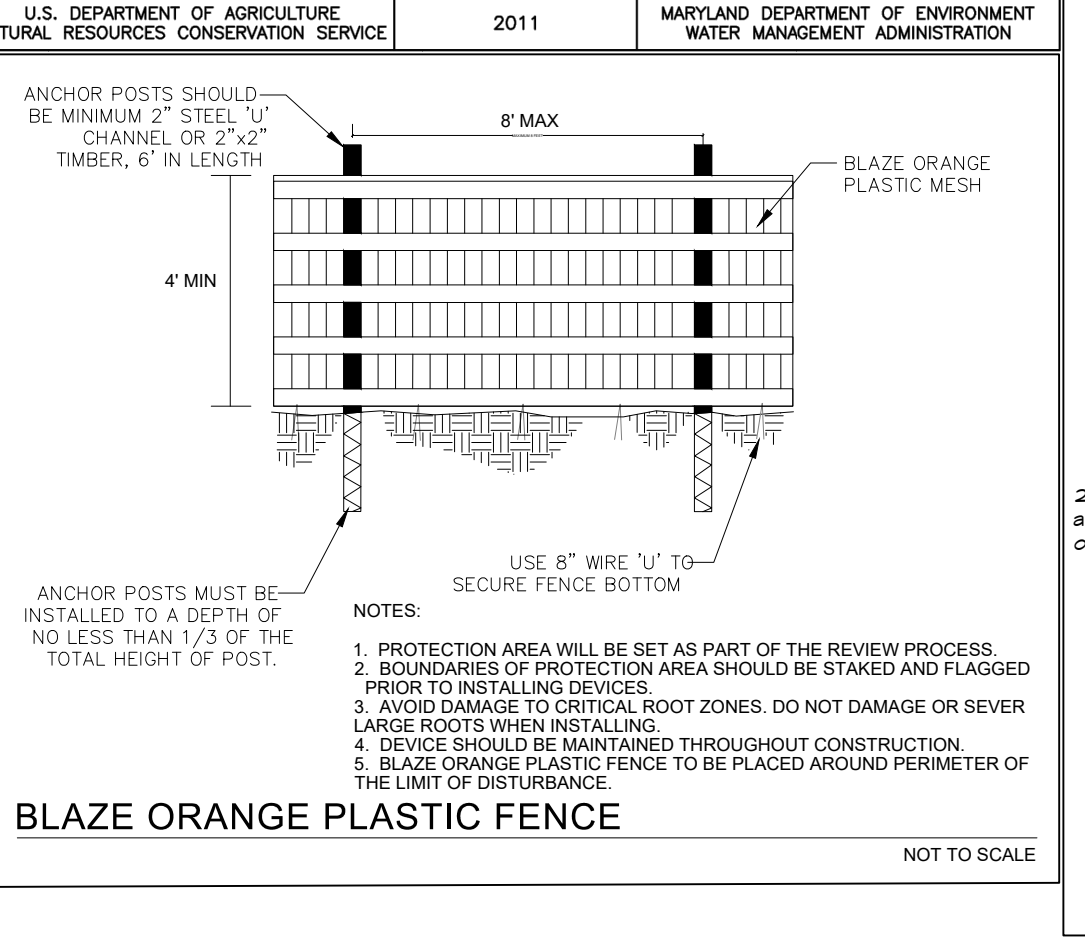


CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED STORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

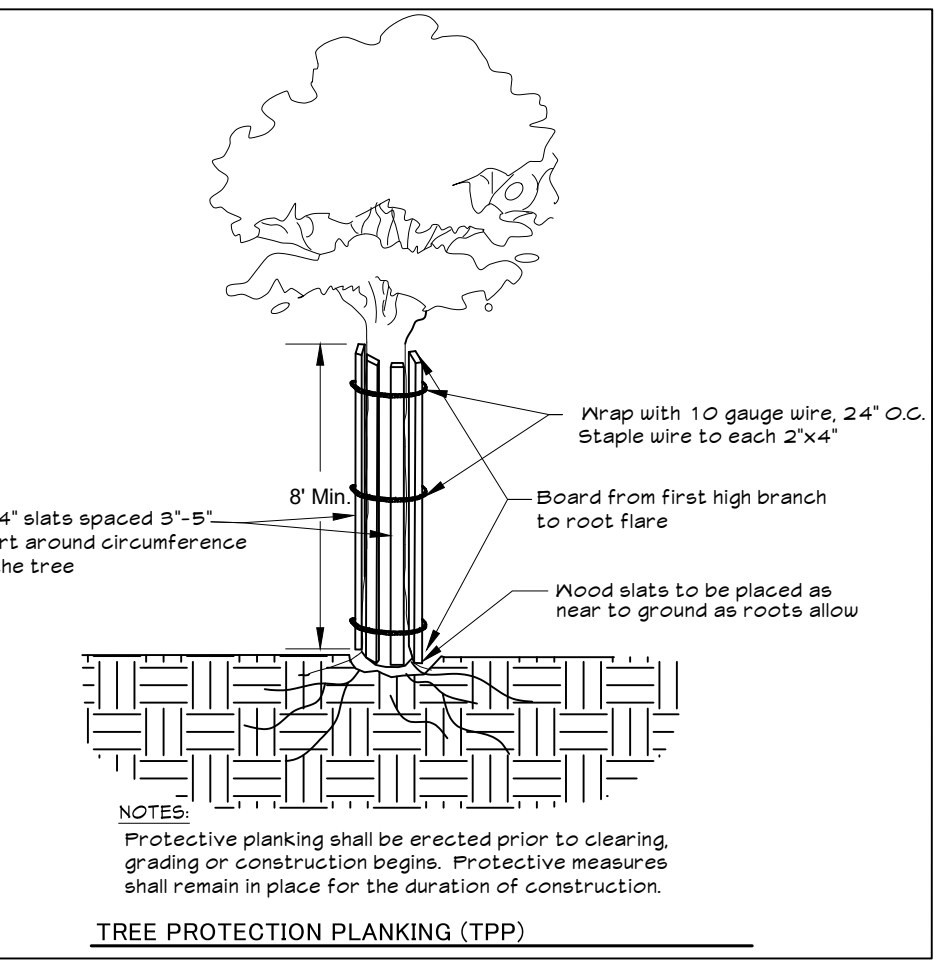
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MGWC 1.2: PUMP-AROUND PRACTICE

- DESCRIPTION THE WORK SHALL CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND INSTREAM CONSTRUCTION SITES.
- IMPLEMENTATION SEQUENCE SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES, AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL 1.2):
1. CONSTRUCTION ACTIVITIES INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BEGIN UNTIL ALL NECESSARY EASEMENTS AND/OR RIGHT-OF-WAYS HAVE BEEN ACQUIRED. ALL EXISTING UTILITIES SHALL BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY RESULT FROM CONSTRUCTION AND SHALL REPAIR THE DAMAGE AT HIS/HER OWN EXPENSE TO THE COUNTRY'S OR UTILITY COMPANY'S SATISFACTION.
  2. THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT OR WMA SEDIMENT CONTROL INSPECTOR AT LEAST 5 DAYS BEFORE BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHALL INFORM THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION AND THE PROVIDER OF LOCAL UTILITIES A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION.
  3. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ON SITE WITH THE WMA SEDIMENT CONTROL INSPECTOR, THE COUNTY PROJECT MANAGER, AND THE ENGINEER TO REVIEW LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL STAKE OUT ALL LIMITS OF DISTURBANCE PRIOR TO THE PRE-CONSTRUCTION MEETING SO THEY MAY BE REVIEWED. THE PARTICIPANTS WILL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREAS AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS. TREES SHALL NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM THE WMA OR LOCAL AUTHORITY.
  4. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.
  5. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHALL BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. IN SOME CASES, WORK MAY BEGIN DOWNSTREAM IF FOLLOWED BY THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. THE CONTRACTOR SHALL ONLY BEGIN WORK IN AN AREA WHICH CAN BE COMPLETED BY THE END OF THE DAY INCLUDING GRADING ADJACENT TO THE CHANNEL. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
  6. SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS. TEMPORARY MEASURE FOR DEWATERING INCHANNEL CONSTRUCTION SITES.
  7. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A DEWATERING BASIN, SEDIMENT BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
  8. TRAVELING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED SHALL BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH OR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHALL BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHALL BE USED ONLY WHEN NECESSARY AND SHALL BE USED ONLY WHERE NOTED ON THE PLANS OR SPECIFIED. (SEE SECTION 4, STREAM CROSSINGS, MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION).
  9. ALL STREAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS-SECTIONS. ALL GRADING MUST BE STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATTING AS SPECIFIED ON THE PLANS.
  10. AFTER AN AREA IS COMPLETED AND STABILIZED, THE CLEAN WATER DIKE SHALL BE REMOVED. AFTER THE FIRST SEDIMENT FLUSH, A NEW CLEAN WATER DIKE SHALL BE ESTABLISHED UPSTREAM FROM THE OLD SEDIMENT DIKE. FINALLY, UPON ESTABLISHMENT OF A NEW SEDIMENT DIKE BELOW THE OLD ONE, THE OLD SEDIMENT DIKE SHALL BE REMOVED.
  11. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHALL BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHALL DISCHARGE ONTO THE SAME VELOCITY DISSIPATOR USED FOR THE MAIN STEM PUMP AROUND.
  12. IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHALL TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY INCLUDING PUMP AROUND PRACTICES, SHALL FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WHEN CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHALL RESUME. WATER FROM THE TRIBUTARY SHALL CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.
  13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.
  14. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.
  15. IF, IN THE JUDGMENT OF THE ENGINEER, INADEQUATE ENERGY DISSIPATION OR CHANNEL BED EROSION IS OCCURRING, THE CONTRACTOR SHALL BE REQUIRED TO INCREASE THE MATERIAL OR PLACEMENT SIZE OF THE OUTFALL PROTECTION AT THE DIRECTION OF THE ENGINEER.
  16. THE CONDITION OF THE OUTLET PROTECTION SANDBAGS IS TO BE CHECKED TWICE PER DAY (START OF WORK DAY AND MID-DAY) TO ENSURE THAT SAND IS NOT ESCAPING BAGS. DAMAGED OR LEAKING BAGS ARE TO BE REMOVED AND REPLACED.
  17. OUTFALL PROTECTION MATERIALS AND GEOTEXTILE SHALL BE REMOVED FROM THE CHANNEL AT THE COMPLETION OF EACH CONSTRUCTION STAGE.



**CITY OF GAITHERSBURG**  
**DEPARTMENT OF PUBLIC WORKS**  
**FINAL PLAN APPROVAL**  
**SEDIMENT & EROSION CONTROL**

APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY Meredith Strider  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

**CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME: \_\_\_\_\_

SHEET TITLE: **ORCHARD RIDGE E&S CONTROL DETAILS**

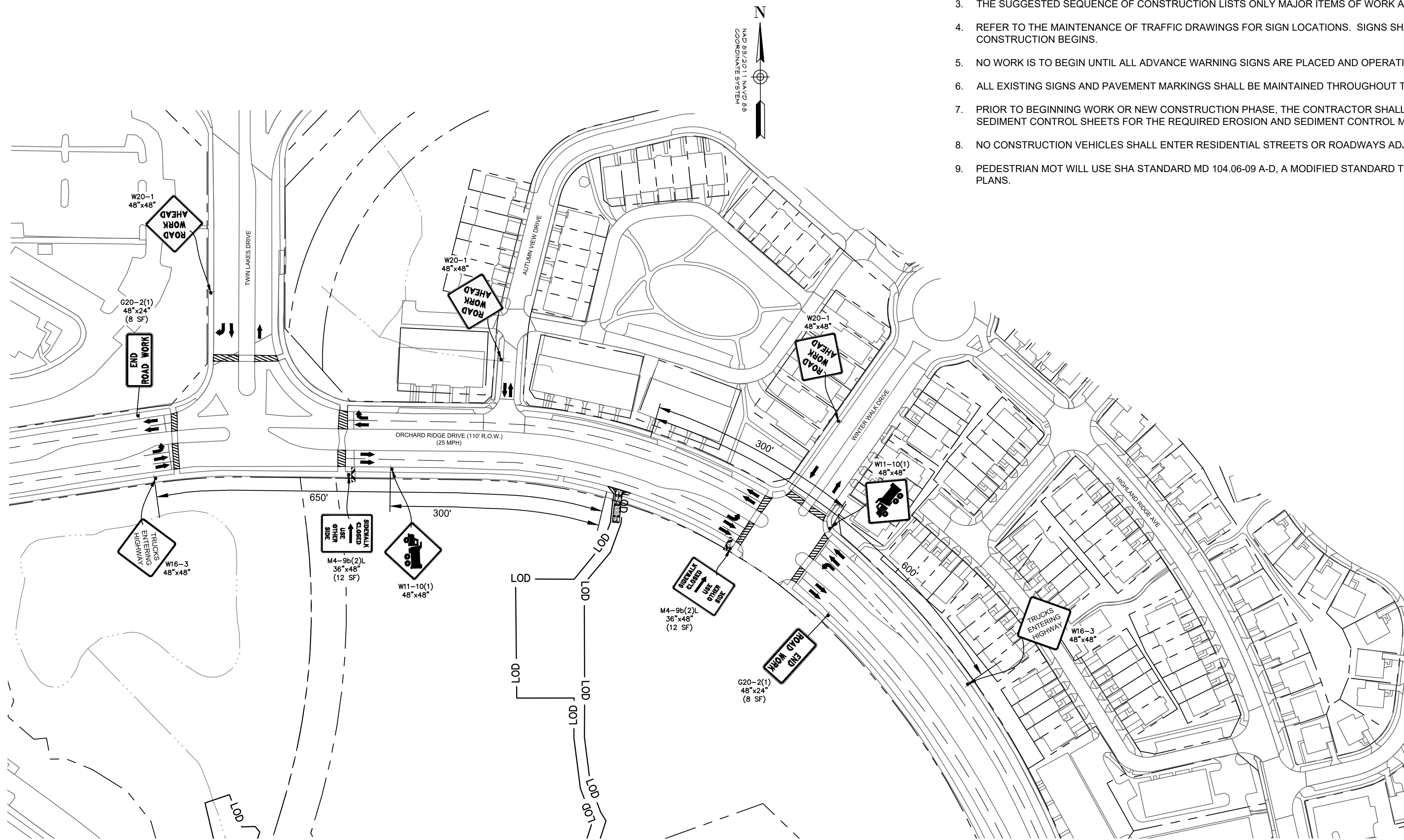
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PROJECT NO.: 151078.02  
SCALE: N.T.S. DATE: 10/25/2017  
DESIGN: AB/SH CHECK: CL  
DWG NO.: SC-09 OF 15  
SHEET NO.: 22 OF 45







1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION (SHA) BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES; THE 2011 MdMUTCD, AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND; THESE PLANS; THE PROJECT SPECIAL PROVISIONS; AND ALL OTHER CONTRACT DOCUMENTS.
2. THE MAINTENANCE OF TRAFFIC DRAWINGS SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES IN SHA STANDARDS MD 104.00-01 TO MD 104.00-18 AND STANDARD DETAILS IN SHA STANDARDS MD 104.01-01 TO MD 104.01-62.
3. THE SUGGESTED SEQUENCE OF CONSTRUCTION LISTS ONLY MAJOR ITEMS OF WORK AS SHOWN ON THESE PLANS.
4. REFER TO THE MAINTENANCE OF TRAFFIC DRAWINGS FOR SIGN LOCATIONS. SIGNS SHALL BE PLACED BEFORE CONSTRUCTION BEGINS.
5. NO WORK IS TO BEGIN UNTIL ALL ADVANCE WARNING SIGNS ARE PLACED AND OPERATIONAL.
6. ALL EXISTING SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
7. PRIOR TO BEGINNING WORK OR NEW CONSTRUCTION PHASE, THE CONTRACTOR SHALL REFER TO THE EROSION AND SEDIMENT CONTROL SHEETS FOR THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED.
8. NO CONSTRUCTION VEHICLES SHALL ENTER RESIDENTIAL STREETS OR ROADWAYS ADJACENT TO THE WORK ZONE.
9. PEDESTRIAN MOT WILL USE SHA STANDARD MD 104.06-09 A-D, A MODIFIED STANDARD THEREOF, OR AS DETAILED ON THE MOT PLANS.

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

[illegible]

ORIGINAL SCALE: 1"=100'

**LEGEND**

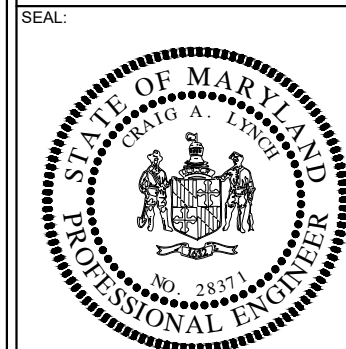
	SIGN
	DIRECTION OF TRAFFIC
	BARRICADE
	EX. PAVEMENT MARKINGS



PROJECT NAME:

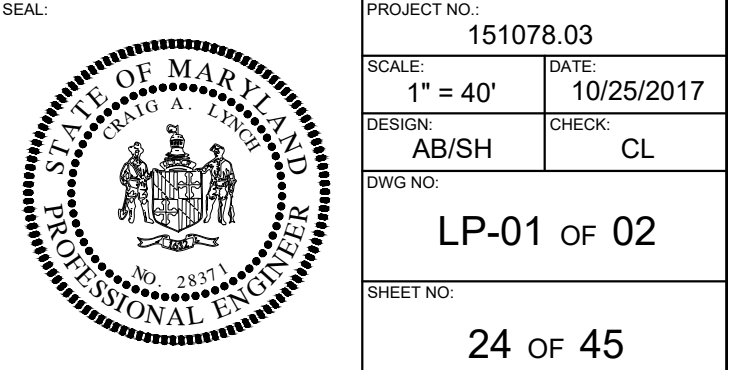
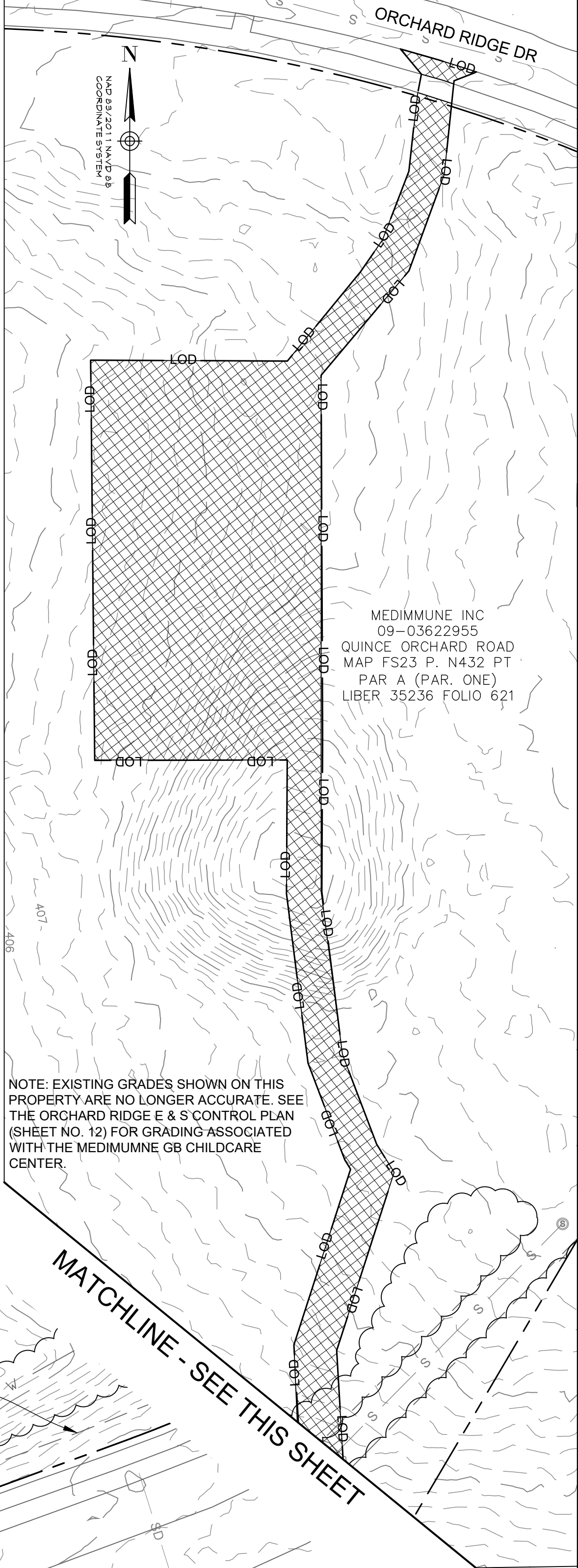
GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE: ORCHARD RIDGE  
MAINTENANCE OF TRAFFIC  
PLAN



PROJECT NO.: <b>151078.03</b>	
SCALE: <b>1" = 100'</b>	DATE: <b>10/25/2017</b>
DESIGN: <b>AB/SH</b>	CHECK: <b>CL</b>
DWG NO: <b>MOT-01 OF 02</b>	
SHEET NO: <b>23 OF 45</b>	







Tree/Forest Landscaping Notes:

General Notes -

1. Unless otherwise stipulated by specific requirements of this manual, the landscaping shown on this plan must be planted in accordance with the latest edition of the landscape specification guidelines, developed by the MD-DC-VA chapter of the Landscape Contractors Association.
2. All trees are to be located and minimum distance of 5 feet from all utility boxes, 5 feet from a storm drain inlet or man-hole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign, and at least 30 feet away from any intersection.
3. Any plantings within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be done to avoid any adverse impact on the roots of existing trees.
4. All plant material will be reinspected for survival by the Planning and Code Administration one year following installation. a 10 percent maintenance bond will be retained during this time period.
5. Soil conditions must be tested, verified, and adjusted by the landscape contractor to insure that appropriate soils composition and pH levels are suitable for plant materials specified for that specific location.

Plant Material Selection -

1. The contractor shall furnish plant materials in sizes and quantities specified in the plant schedules.
2. Nursery grown plant material should meet or exceed the requirements of the American Nursery & Landscape Association's (A.N.L.A.) latest edition of "American Standard Nursery Stock" (ANSI Z60.1) Specifications, particularly regarding the size, growth, size of the root ball, and density of branch structure.
3. All planting material shall be sourced from within 100 miles of the site.
4. No substitutions shall be made without the written consent of the Owner and/or Landscape Architect.
5. The Landscape Architect or Owner shall have the right, at any stage of the operations, to reject any and all work and materials which, in his or her opinion, does not meet the requirements of these plans and specifications. All rejected material shall be removed from the site by the Contractor.

Plant Material Transport, Approval, & Storage -

1. Plant material shall be protected to prevent sun scald, desiccation, and structural damage during transport to the site. Root stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
2. Plant material shall be inspected to be free of disease, damage, insect infestation, and vigor upon delivery to the site. All plants should be healthy and well structured. No heeled-cold storage or collected stock will be accepted. Plants in poor condition shall be rejected, removed from the site and replaced with acceptable materials.
3. Plant material shall be stored in a cool, shaded area on the site and kept moist to prevent desiccation until ready for planting. Planting shall begin within 24 hours of plant delivery to the site. Plant material that remains unplanted beyond 24 hours shall be protected from direct sun, and weather and kept moist. Plant materials shall not be left unplanted for more than 2 weeks.
4. The contractor is required to obtain clean fresh water for use during planting operations and the subsequent maintenance period.

Site Preparation and Planting -

1. The site and areas immediately abutting (within 25' of) the LOD shall be treated for invasive species prior to the start of construction.
2. No clearing or grading shall begin before stress-reduction measures have been implemented. Such measures may include root pruning, crown reduction or pruning, etc as specified on sheet 38 of 61 or by the plan preparer or an MDLTE/ISA certified arborist. See Forest Conservation Plan sheet for more information.
3. Prior to beginning any construction activities, tree protection fencing shall be installed along all sections of the LOD abutting wooded/forested areas and around all 'tree save' areas to ensure preservation of these areas. See E&S plan sheets or the Forest Conservation Plan sheet for more information.

4. All tree protection measures must be in place at the time of the Sediment & Erosion Control inspection, prior to the commencement of demolition, site clearing, grading, or construction. Tree protection devices shall be maintained for the duration of construction. No equipment, trucks, materials, or debris may be stored within the tree protection areas during the entire construction project.
5. All trees to be removed must be removed in a manner that will not damage the remaining trees. The Contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable, soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
6. Any trees that are to remain that are damaged during the clearing operation must be repaired or removed and replaced in an approved manner by an MDLTE/ISA certified arborist or city representative as soon as final clearing has been completed.
7. Root pruning may be necessary where the critical root zone is impacted, as determined by the plan preparer or an MDLTE/ISA certified arborist. Pruning shall be along the LOD adjacent to tree protection fencing. A certified arborist shall supervise or conduct root pruning.
8. Refer to the MDSHA Standards and Specifications Section 710.03.01 Planting Seasons Table for acceptable planting period. Planting shall not be completed in sub-freezing temperatures; when the ground is frozen; when weather conditions will adversely affect plant materials; or when the soil is too wet or otherwise in a condition not acceptable for planting.
9. Mow planting area close to the ground one week (or less) prior to container planting date.
10. The Contractor is responsible for testing project soils. The Contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to fertilizers, lime, and topsoil. Proper planting soils must be verified prior to when planting materials are installed.
11. Prepare planting pits per details as shown MDSHA Standards and Specifications Section 710.03.04.

12. All trees are to be located and minimum distance of 5 feet from all utility boxes, 5 feet from a storm drain inlet or man-hole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign, and at least 30 feet away from any intersection.
13. Install plant materials per MDSHA Standards and Specifications 710.03.09.
14. Upon completion of all landscaping, an acceptance of the work shall be held. The contractor shall notify the Landscape Architect of the Owner for scheduling of the inspection at least seven (7) days prior to the anticipated inspection date.
15. After installation of plants, the contractor shall monitor the soil moisture and water needs of plants and seed as necessary to ensure survivability. Watering planting pits and seeded areas should occur as specified in MDSHA Standards and Specifications Section 710.03.04(c).
16. A biodegradable tree shelter is to be installed as shown in the Biodegradable Tree Shelter detail around every planted deciduous tree.

Maintenance -

1. Upon completion of installation, the planting area is to be maintained for a 2 year period. An 85% survival rate must be achieved from the date of acceptance to the termination of the maintenance period. Maintenance shall be as follows:

1. Any plant material showing signs of distress are to be replaced immediately by the contractor.

2. Native volunteer seedlings shall be removed only if they are adversely impacting the growth of the planted material. Non-native and invasive species are to be treated within the entire planting area through selected and approved means.

3. All man-made materials shall be removed from the site which would impact the establishment of the planted materials.

4. Thoroughly water planted material once weekly or as needed during the growing season.

5. Planted material is to be monitored for signs of damage and appropriate actions shall be taken to prevent further damage. This may include, but not be limited to, the following: pest damage or infestation, disease or browsing; any dead or decimated material shall be replaced with the identical species or an approved replacement.

6. At the end of the 2 year maintenance period, the site shall be inspected for the 85% survival rate as required by the City of Gaithersburg

ORCHARD RIDGE TREE INVENTORY  
(DBH 12" OR GREATER)

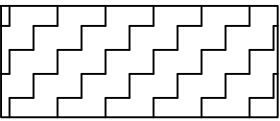
Tree Number	Species	Condition	DBH (in)
T-1	River birch ( <i>Betula nigra</i> )	Fair	14.3
T-2	River birch ( <i>Betula nigra</i> )	Good	14
T-3	River birch ( <i>Betula nigra</i> )	Good	16
T-4	River birch ( <i>Betula nigra</i> )	Good	14
T-5	River birch ( <i>Betula nigra</i> )	Good	12.1
T-6	River birch ( <i>Betula nigra</i> )	Good	14.4
T-7	River birch ( <i>Betula nigra</i> )	Good	17
T-8	White pine ( <i>Pinus strobus</i> )	Fair	17.5
T-9	White pine ( <i>Pinus strobus</i> )	Fair	20.3
T-10	White pine ( <i>Pinus strobus</i> )	Good	16.3
T-11	White pine ( <i>Pinus strobus</i> )	Good	18.4
T-12	White pine ( <i>Pinus strobus</i> )	Fair	17.5
T-13	White pine ( <i>Pinus strobus</i> )	Good	17.8
T-14*	American sycamore ( <i>Platanus occidentalis</i> )	Good	23.6
T-15*	Red maple ( <i>Acer rubrum</i> )	Good	19
T-16*	Black cherry ( <i>Prunus serotina</i> )	Fair	13
T-17	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	15.4
T-18	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	16.3
T-19*	Black cherry ( <i>Prunus serotina</i> )	Fair	14
T-20*	Black cherry ( <i>Prunus serotina</i> )	Fair	15.8
T-21*	American sycamore ( <i>Platanus occidentalis</i> )	Good	26.3
T-22*	Red maple ( <i>Acer rubrum</i> )	Good	23.8
T-23	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	15.5
T-24	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	14.6
T-25	Callery pear ( <i>Pyrus calleryana</i> )	Good	16.1
T-26	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	13.6
T-27*	Callery pear ( <i>Pyrus calleryana</i> )	Good	13.5
T-28*	Red maple ( <i>Acer rubrum</i> )	Good	22.4
T-29	Black cherry ( <i>Prunus serotina</i> )	Good	16.8
T-30	Black cherry ( <i>Prunus serotina</i> )	Good	13.7
T-31	Black cherry ( <i>Prunus serotina</i> )	Good	13.1
T-32	Red maple ( <i>Acer rubrum</i> )	Good	13.5
T-33	Red maple ( <i>Acer rubrum</i> )	Good	13.8
T-34	Red maple ( <i>Acer rubrum</i> )	Good	32.8
T-35	Red maple ( <i>Acer rubrum</i> )	Good	30.2
T-36	Red maple ( <i>Acer rubrum</i> )	Good	16.1

T-37	Red maple ( <i>Acer rubrum</i> )	Good	13.2
T-38	Red maple ( <i>Acer rubrum</i> )	Good	32.7
T-39	Eastern red cedar ( <i>Juniperus virginiana</i> )	Good	17.4
T-40	Black cherry ( <i>Prunus serotina</i> )	Good	13.4
T-41	Black cherry ( <i>Prunus serotina</i> )	Good	12.5
T-42*	Red maple ( <i>Acer rubrum</i> )	Good	15.3
T-43*	Red maple ( <i>Acer rubrum</i> )	Good	12.5
T-44	Black cherry ( <i>Prunus serotina</i> )	Good	21.5
T-45*	Black cherry ( <i>Prunus serotina</i> )	Fair	14
T-46*	Red maple ( <i>Acer rubrum</i> )	Fair	14.5
T-47*	Black willow ( <i>Salix nigra</i> )	Fair	13
T-48*	Black willow ( <i>Salix nigra</i> )	Fair	15
T-49*	Red maple ( <i>Acer rubrum</i> )	Good	29.8
T-50*	Red maple ( <i>Acer rubrum</i> )	Good	22.6
T-51	Slippery elm ( <i>Ulmus rubra</i> )	Good	21.8
T-52	Red maple ( <i>Acer rubrum</i> )	Good	35.3
T-53	Red maple ( <i>Acer rubrum</i> )	Good	22.9
T-54	Red maple ( <i>Acer rubrum</i> )	Good	12.8
T-55	Red maple ( <i>Acer rubrum</i> )	Good	18.4
T-56	Black cherry ( <i>Prunus serotina</i> )	Fair	15.4
T-57	Black cherry ( <i>Prunus serotina</i> )	Fair	21.5
T-58	Red maple ( <i>Acer rubrum</i> )	Good	17.2
T-59	Red maple ( <i>Acer rubrum</i> )	Good	15
T-60	Black cherry ( <i>Prunus serotina</i> )	Poor	14
T-61	Eastern red cedar ( <i>Juniperus virginiana</i> )	Fair	12.2
T-62	Black cherry ( <i>Prunus serotina</i> )	Fair	15.5
T-63	Black cherry ( <i>Prunus serotina</i> )	Good	18.9
T-64	Black cherry ( <i>Prunus serotina</i> )	Good	13.6
T-65	Black cherry ( <i>Prunus serotina</i> )	Poor	12.7
T-66	Eastern red cedar ( <i>Juniperus virginiana</i> )	Fair	12.8
T-67	River birch ( <i>Betula nigra</i> )	Fair	18.1
T-68	Black cherry ( <i>Prunus serotina</i> )	Good	13.7
T-69	Black cherry ( <i>Prunus serotina</i> )	Good	12.3
T-70	Red maple ( <i>Acer rubrum</i> )	Good	20.8
T-71	Black cherry ( <i>Prunus serotina</i> )	Fair	15.3
T-72	Black cherry ( <i>Prunus serotina</i> )	Fair	17.3

Bold data indicates specimen trees (greater than 30" DBH)

\*Trees to be removed

T-73	Red maple ( <i>Acer rubrum</i> )	Good	23.4
T-74	Red maple ( <i>Acer rubrum</i> )	Good	19.9
T-75	Black cherry ( <i>Prunus serotina</i> )	Good	14
T-76	Black cherry ( <i>Prunus serotina</i> )	Fair	20.2
T-77	Red maple ( <i>Acer rubrum</i> )	Poor	12.1
T-78	Black cherry ( <i>Prunus serotina</i> )	Poor	15.9
T-79	Red maple ( <i>Acer rubrum</i> )	Good	20.5
T-80	Black cherry ( <i>Prunus serotina</i> )	Fair	16.2
T-81	Callery pear ( <i>Pyrus calleryana</i> )	Poor	12.3
T-82	Callery pear ( <i>Pyrus calleryana</i> )	Good	15
T-83	Black cherry ( <i>Prunus serotina</i> )	Good	18.2
T-84	Red maple ( <i>Acer rubrum</i> )	Fair	14.5
T-85	Red maple ( <i>Acer rubrum</i> )	Good	16.8
T-86	Black cherry ( <i>Prunus serotina</i> )	Good	12.1
T-87	Black cherry ( <i>Prunus serotina</i> )	Good	14.2
T-88*	Black cherry ( <i>Prunus serotina</i> )	Good	14.6
T-89	Black cherry ( <i>Prunus serotina</i> )	Good	14.5
T-90	Black cherry ( <i>Prunus serotina</i> )	Good	15.6
T-91	Black cherry ( <i>Prunus serotina</i> )	Good	15.1
T-92	Red maple ( <i>Acer rubrum</i> )	Good	20.3
T-93	Black cherry ( <i>Prunus serotina</i> )	Good	18.9
T-94	Black cherry ( <i>Prunus serotina</i> )	Good	12.4
T-95	Red maple ( <i>Acer rubrum</i> )	Good	13.9
T-96	Red maple ( <i>Acer rubrum</i> )	Good	21.5
T-97	Red maple ( <i>Acer rubrum</i> )	Good	13.1
T-98*	Red maple ( <i>Acer rubrum</i> )	Good	13.3
T-99	Red maple ( <i>Acer rubrum</i> )	Good	18.5
T-100*	Black willow ( <i>Salix nigra</i> )	Poor	16.3
T-101	Black willow ( <i>Salix nigra</i> )	Poor	16.3
T-102	Black willow ( <i>Salix nigra</i> )	Fair	13.2
T-103	River birch ( <i>Betula nigra</i> )	Fair	12.8
T-104	River birch ( <i>Betula nigra</i> )	Good	16.2
T-105	Water oak ( <i>Quercus nigra</i> )	Good	12.1
T-106	River birch ( <i>Betula nigra</i> )	Good	13.4
T-107	River birch ( <i>Betula nigra</i> )	Good	12.6
T-108	River birch ( <i>Betula nigra</i> )	Good	12.8
T-109	River birch ( <i>Betula nigra</i> )	Good	13

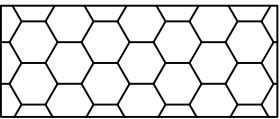


Zone 1: Forested Scrub Shrub Wetland (Total Area = 0.53 AC / 23,043 SF)

Botanical Name	Common Name	Category	Size	Form	Spacing	Indicator	Quantity
<i>Platanus occidentalis</i>	American Sycamore	LST	1" Cal.	#10 Cont.	30'-40' O.C.	FACW	11
<i>Betula nigra</i>	River Birch	LST	1" Cal.	#10 Cont.	30'-40' O.C.	FACW	2
<i>Populus heterophylla</i>	Swamp Cottonwood	LST	1" Cal.	#10 Cont.	30'-40' O.C.	OBL	2
<i>Viburnum dentatum</i>	Arrowwood	Shrub	2'-3' Height	#2 Cont.	10'-12' O.C.	FAC	10
<i>Ilex glabra</i>	Inkberry	Shrub	2'-3' Height	#2 Cont.	10'-12' O.C.	FACW	10
<i>Lindera benzoin</i>	Spicebush	Shrub	2'-3' Height	#2 Cont.	10'-12' O.C.	FACW	9
<i>Ilex verticillata</i>	Winterberry Holly	Shrub	2'-3' Height	#2 Cont.	10'-12' O.C.	FACW	9

LST= Large Shade Tree

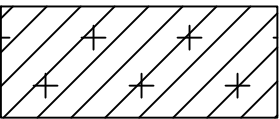
Total QTY 53



Zone 2: Emergent Wetland Plugs (Total Area = 0.18 AC / 7,724 SF)

Botanical Name	Common Name	Category	Size	Form	Spacing	Indicator	Quantity
<i>Symplocarpus foetidus</i>	Skunk Cabbage	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	215
<i>Persicaria hydropiperoides</i>	Swamp smartweed	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	215
<i>Impatiens capensis</i>	Jewelweed	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	215
<i>Osmunda regalis</i>	Royal Fern	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	215
<i>Osmunda cinnamomea</i>	Cinnamon Fern	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	215
<i>Juncus effusus</i>	Soft Rush	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	215
<i>Carex lurida</i>	Shallow Sedge	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	215
<i>Scirpus cyperinus</i>	Yellow Nutsedge	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	215
<i>Panicum virgatum</i>	Switchgrass	Perennial Plug	2" Plug	Plug	2' O.C.	FAC	211

Total QTY 1,931



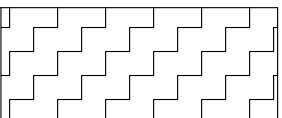
Zone 3: Riparian Buffer Tree/Shrub Plantings (Total Area = 0.36 AC / 15,536 SF)

Botanical Name	Common Name	Strata	Size	Form	Spacing	Indicator	Quantity
<i>Platanus occidentalis</i>	American Sycamore	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	11
<i>Quercus rubra</i>	Northern Red Oak	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	10
<i>Carya glabra</i>	Pignut Hickory	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	10
<i>Quercus alba</i>	White Oak	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	10
<i>Cercis canadensis</i>	Eastern Redbud	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	UPL	6
<i>Sassafras albidum</i>	Sassafras	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	FACU	6
<i>Ilex opaca</i>	American Holly	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	FAC	6
<i>Hamamelis virginiana</i>	American witch hazel	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	16
<i>Lindera benzoin</i>	Spicebush	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACW	16
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	16
<i>Kalmia latifolia</i>	Mountain Laurel	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	15

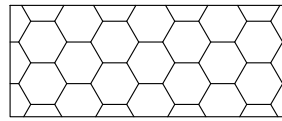
LST= Large Shade Tree, MST=Medium Shade Tree

Total QTY 122

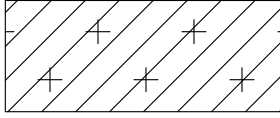
Zone 1 - 0.53 AC / 23,043 SF Wetland Seed Mix (Total Area = 0.72 AC / 31,451 SF)



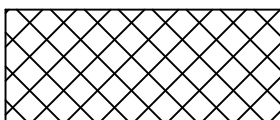
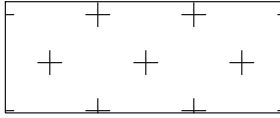
Zone 2 - 0.19 AC / 8,408 SF



Zone 3 - 0.31 AC / 13,383 SF



Zone 4 - 0.09 AC / 4,030 SF



Zone 5: Turfgrass Seed Mix (Total Area = 0.68 AC / 29,795 SF)

Botanical Name	Qty (lbs)
SHA Turfgrass Seed Mix 920.06.07 (a)	136

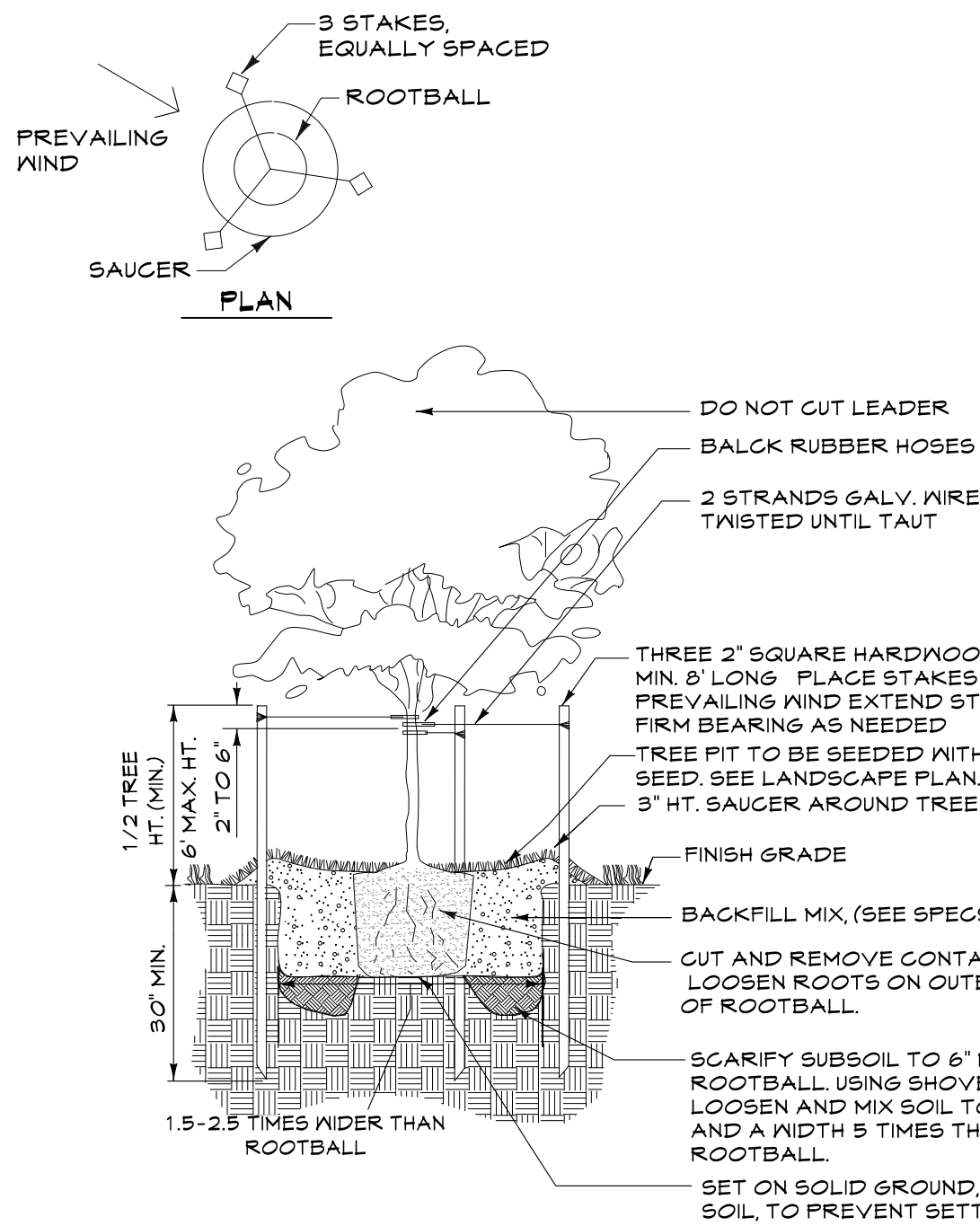
Total Application Rate of 200 lbs/ac

Botanical Name	Common Name	Application Rate (lbs/ac)	% Seed Mix	Indicator	Zone 1 Quantity (lbs)	Zone 1 Quantity (lbs)
<i>Carex vulpinoidea</i>	Fox Sedge	8	20	OBL	4.24	3.8
<i>Elymus virginicus</i>	Virginia Wild Rye	12	30	FACW	6.36	5.7
<i>Panicum virgatum</i>	Switchgrass	4	10	FAC	2.12	1.9
<i>Cinna arundinacea</i>	Wood reedgrass	2.8	7	FACW	1.484	1.33
<i>Carex lurida</i>	Lurid Sedge	2.4	6	OBL	1.272	1.14
<i>Carex scoparia</i>	Blunt Broom Sedge	2.4	6	FACW	1.272	1.14
<i>Scirpus atrovirens</i>	Green Bulrush	2	5	OBL	1.06	0.95
<i>Verbena hastata</i>	Swamp Verbena	2	5	FACW	1.06	0.95
<i>Juncus effusus</i>	Soft rush	1.2	3	FACW	0.636	0.57
<i>Onoclea sensibilis</i>	Sensitive Fern	0.8	2	FACW	0.424	0.38
<i>Scirpus pungens</i>	Common Three-Square	0.8	2	OBL	0.424	0.38
<i>Eupatorium fistulosum</i>	Joe Pye Weed	0.8	2	FACW	0.424	0.38
<i>Labelia cardinalis</i>	Cardinal Flower	0.8	2	FACW	0.424	0.38
Total Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass ( <i>Lolium perenne</i> ) and 60 lbs/ac of Hard Fescue ( <i>Festuca trachyphylla</i> ) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet ( <i>Setaria italica</i> ) if during May 16 to July 31.					Seed Total (lbs):	21.20
						19.00

Total Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass (*Lolium perenne*) and 60 lbs/ac of Hard Fescue (*Festuca trachyphylla*) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet (*Setaria italica*) if during May 16 to July 31.

Total Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass ( <i>Lolium perenne</i> )				Seed Total (lbs):	21.20	19.00
and 60 lbs/ac of Hard Fescue ( <i>Festuca trachyphylla</i> ) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet ( <i>Setaria italica</i> ) if during May 16 to July 31.						
Seed Mix (Total Area = 0.40 / 17,413 SF)						
Botanical Name	Common Name	Application Rate (lbs/ac)	% Seed Mix	Zone 3 Quantity (lbs)	Zone 4 Quantity (lbs)	
<i>Elymus</i>	Virginia Wild Rye	10	25	3.1	0.9	
<i>sp.</i>	Riverbank Wildrye	8	20	2.5	0.7	
<i>Gerardii</i>	Big Bluestem	8	20	2.5	0.7	
	Shallow Sedge	4	10	1.2	0.4	
<i>Setaria</i>	Switchgrass	3.6	9	1.1	0.3	
<i>sp.</i>	Soft Rush	1.6	3	0.5	0.1	
<i>L. boracensis</i>	New York Ironweed	1.2	2	0.4	0.1	
<i>perfoliatum</i>	Common Boneset	0.8	2	0.2	0.1	
<i>anthoides</i>	Oxeye Sunflower	0.8	2	0.2	0.1	
<i>virginica</i>	Blue Vervain	0.8	2	0.2	0.1	
<i>stulosum</i>	Joe Pye Weed	0.8	2	0.2	0.1	
<i>sp.</i>	Blue Lobelia	0.4	1	0.1	0.0	
Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass				Seed Total (lbs):	12.40	3.60

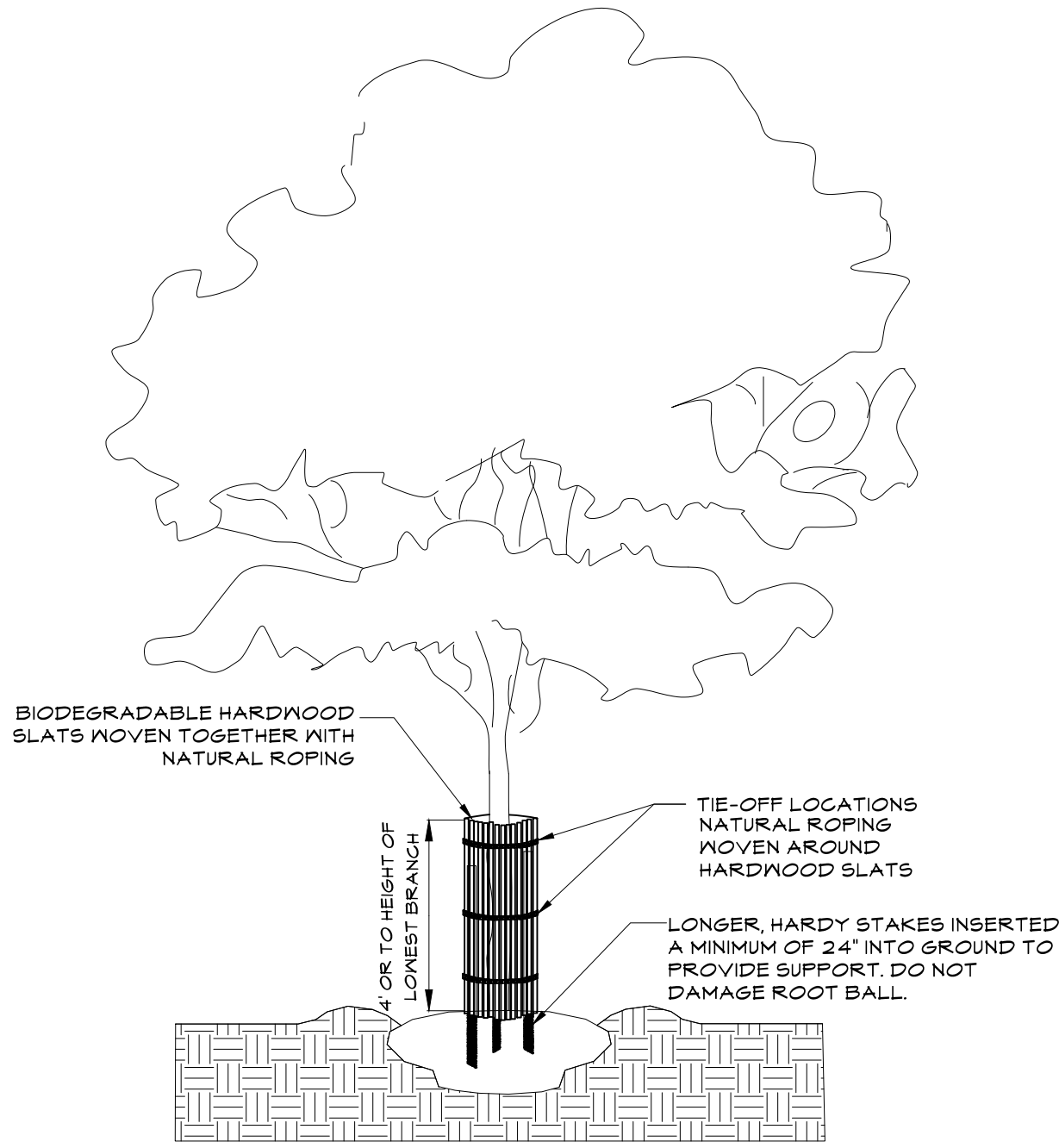




- NOTES:
- DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING STAKES.
  - WATER THOROUGHLY AFTER INSTALLATION.
  - REMOVE ALL HOSE, WIRE, AND STAKES AT THE END OF GUARANTEE PERIOD.
  - THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IF SOIL CONDITIONS ARE FOUND TO BE UNSUITABLE AND ADDITIONAL AMENDMENT IS REQUIRED.
  - DO NOT WRAP TRUNK WITH TAPE.
  - PRUNE TREE OF ALL MAJOR DEADWOOD CRISS-CROSSING BRANCHES, AND ANY EXCESSIVE AND/OR SUCKER GROWTH.

#### DECIDUOUS TREE PLANTING DETAIL

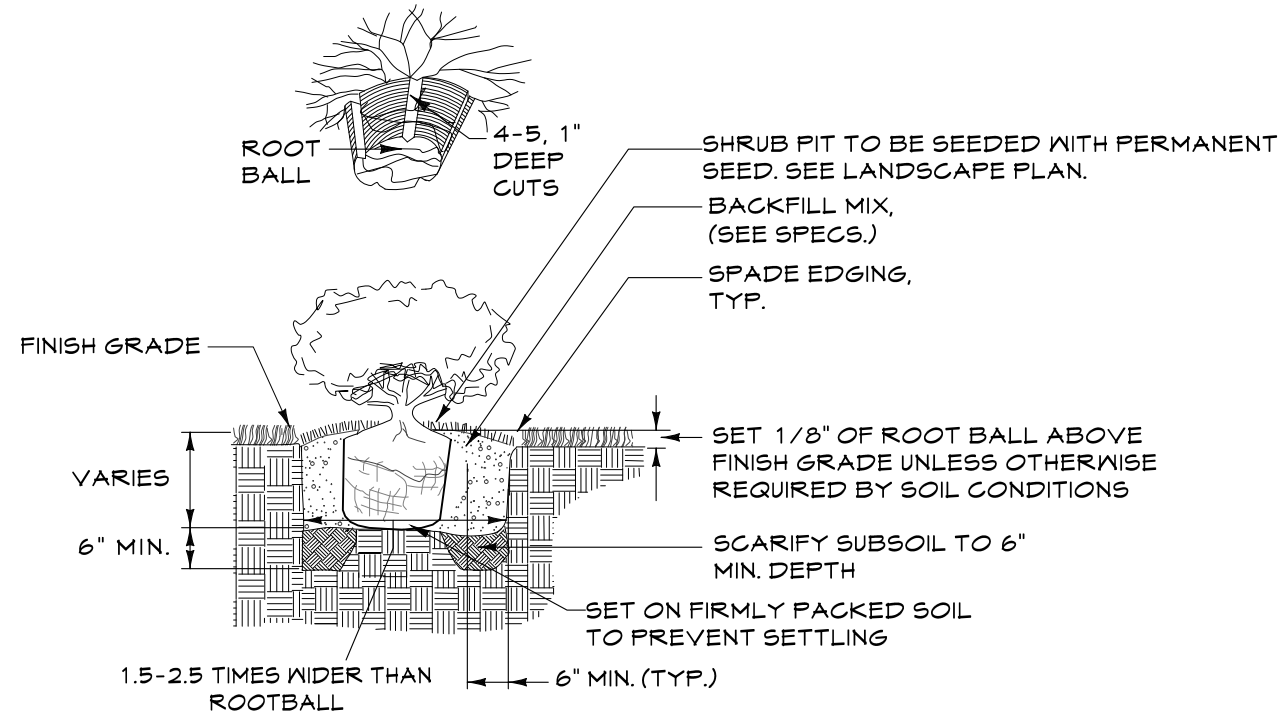
Not To Scale



#### BIODEGRADABLE TREE SHELTER

Not To Scale

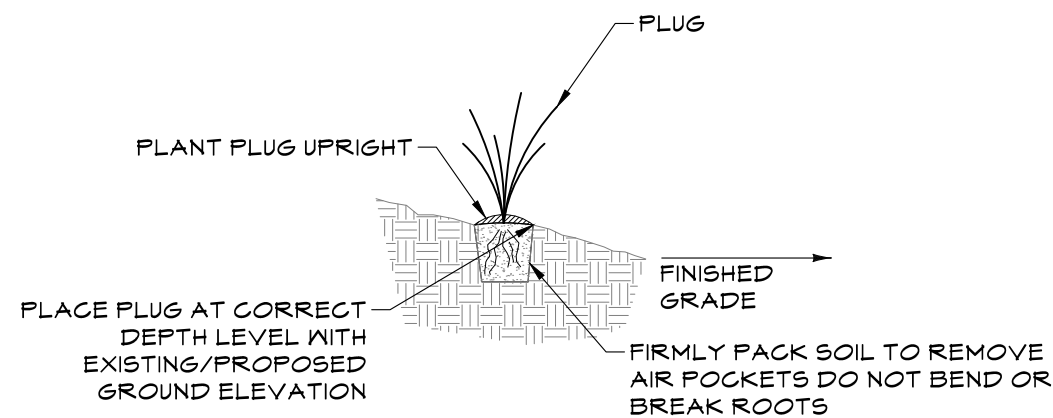
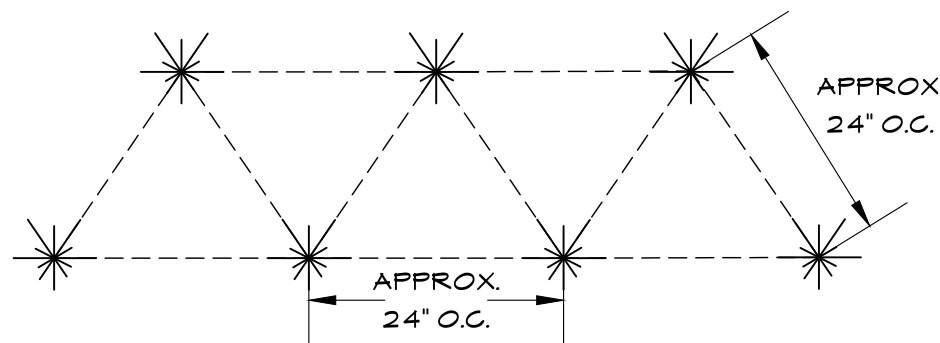
NOTE: TO BE INSTALLED AROUND EACH DECIDUOUS TREE.



- NOTES:
- FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
  - THIN DECIDUOUS SHRUBS ALL MAJOR DEADWOOD AND ANY EXCESSIVE AND/OR SUCKER GROWTH.
  - EXCAVATE HOLE 1-1/2 TIMES THE WIDTH OF THE ROOT MASS. REMOVE ALL NON-ORGANIC MATERIAL FROM THE PLANTING PIT AND TAMP LOOSE SOIL IN BOTTOM OF PIT BY HAND.

#### SHRUB PLANTING DETAIL

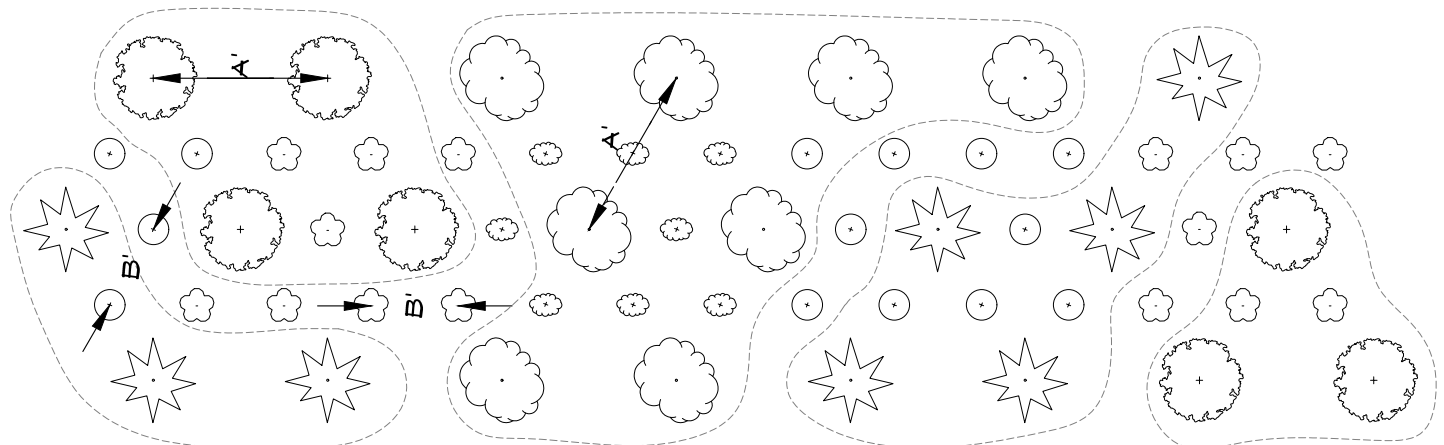
Not To Scale



#### 2" PERENNIAL PLUG DETAIL

Not To Scale

- Notes:
- This planting is to mimic natural seed dispersal.
  - Each species is to be planted in a group of common vegetation species.
  - The minimum cluster is a group of 15 plugs of the same species.
  - The maximum cluster is a group of 35 plugs of the same species.



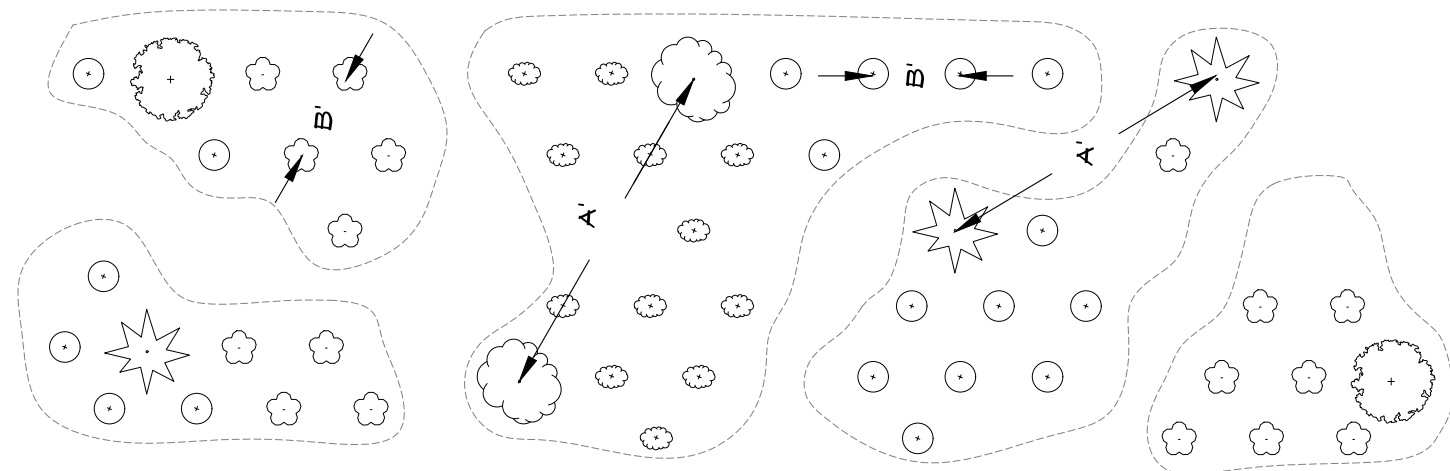
- Tree Canopy Species - Shrub Species

A' - Tree spacing per plant schedule  
B' - Shrub spacing per plant schedule

- Notes:
- This planting is to mimic natural seed dispersal.
  - Each species is to be planted in a group of common vegetation species.
  - The minimum cluster is a group of 3 trees/shrubs of the same species.
  - The maximum cluster is a group of 15 trees/shrubs of the same species.

#### RIPARIAN CLUSTER PLANTING DETAIL

Not To Scale



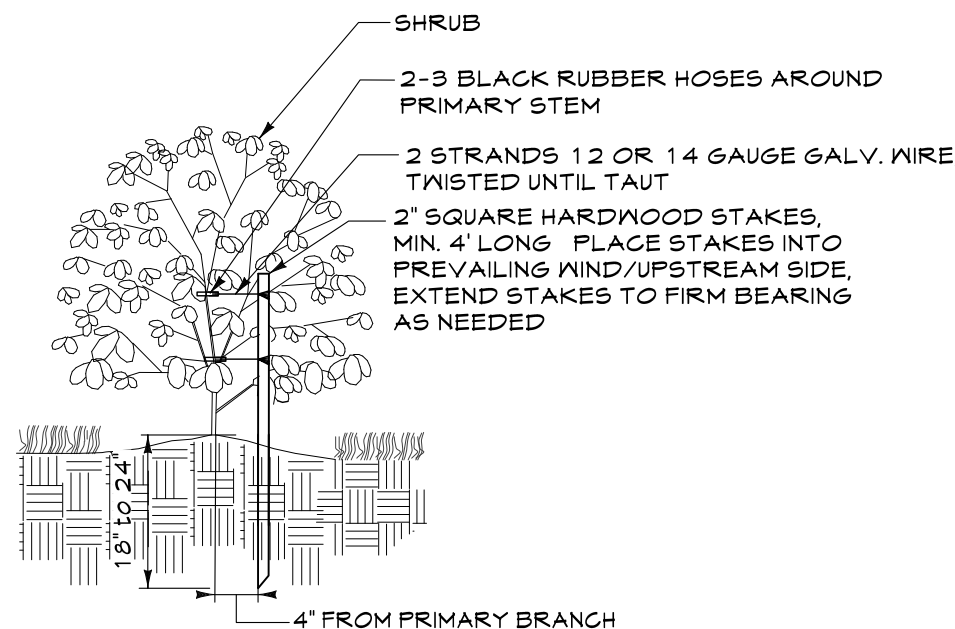
- Tree Canopy Species - Shrub Species

A' - Tree spacing per plant schedule  
B' - Shrub spacing per plant schedule

- Notes:
- This planting is to mimic natural seed dispersal of a scrub-shrub wetland.
  - Each species is to be planted in a group of common vegetation species.
  - The minimum cluster is a group of 3 shrubs of the same species.
  - The maximum cluster is a group of 25 shrubs of the same species.

#### WETLAND SHRUB CLUSTER PLANTING DETAIL

Not To Scale



#### WETLAND SHRUB STAKING DETAIL

Not To Scale

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

#### REVISIONS

NO.	DATE	DESCRIPTION

**MM CENTURY**  
**ENGINEERING**

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

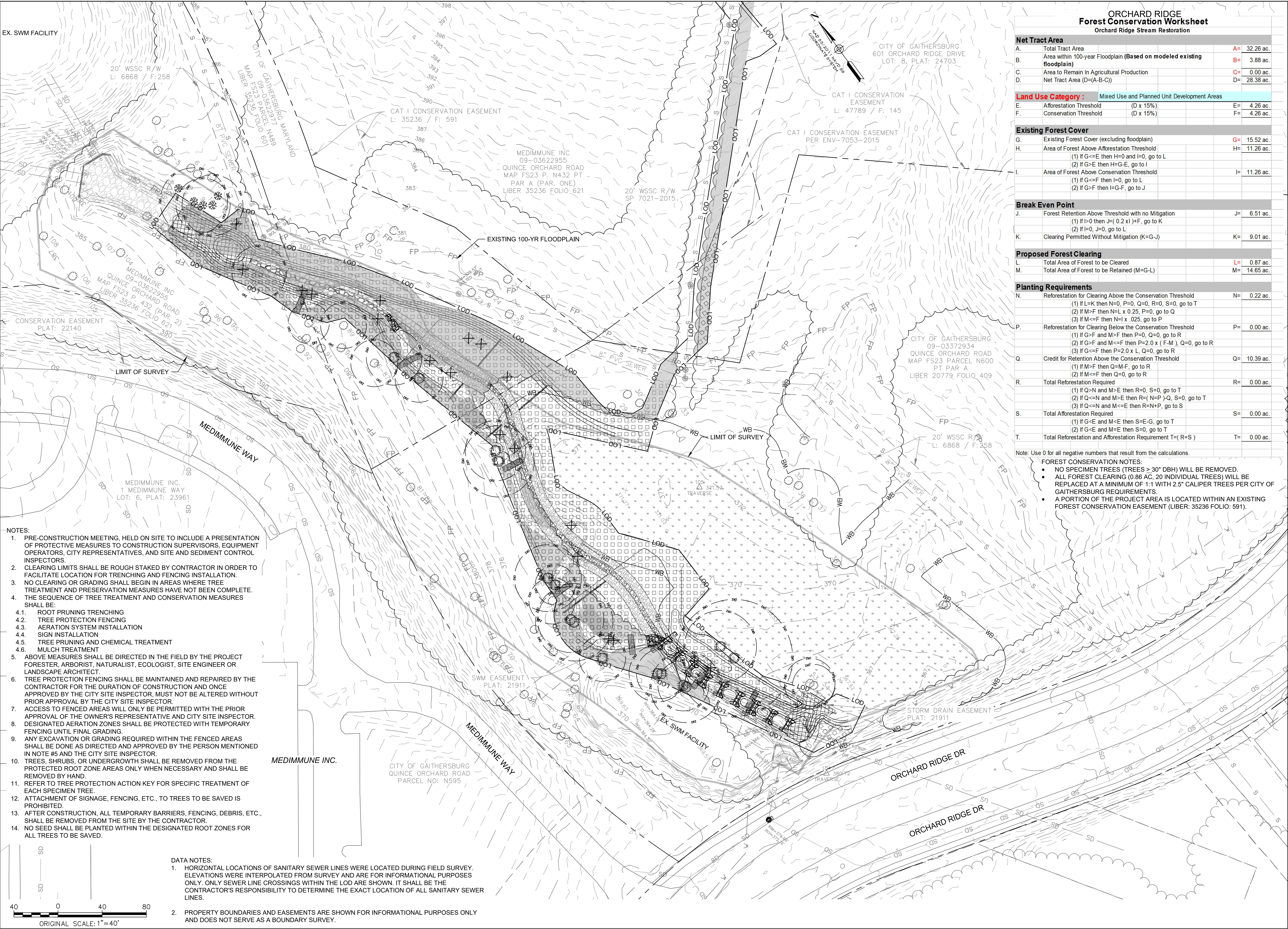
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**ORCHARD RIDGE  
LANDSCAPE DETAILS**

SEAL:	PROJECT NO: 151078.03	
	SCALE: N.T.S.	DATE: 1/31/2018
	DESIGN: AB/SH	CHECK: CL
	DWG NO: LN-01	of 02
SHEET NO: 26 of 45		





- NOTES:
- PRE-CONSTRUCTION MEETING, HELD ON SITE TO INCLUDE A PRESENTATION OF PROTECTIVE MEASURES TO CONSTRUCTION SUPERVISORS, EQUIPMENT OPERATORS, CITY REPRESENTATIVES, AND SITE AND SEDIMENT CONTROL INSPECTORS.
  - CLEARING LIMITS SHALL BE ROUGH STAKED BY CONTRACTOR IN ORDER TO FACILITATE LOCATION FOR TRENCHING AND FENCING INSTALLATION.
  - NO CLEARING OR GRADING SHALL BEGIN IN AREAS WHERE TREE TREATMENT AND PRESERVATION MEASURES HAVE NOT BEEN COMPLETE.
  - THE SEQUENCE OF TREE TREATMENT AND CONSERVATION MEASURES SHALL BE:
    - ROOT PRUNING TRENCHING
    - TREE PROTECTION FENCING
    - AERATION SYSTEM INSTALLATION
    - SIGN INSTALLATION
    - TREE PRUNING AND CHEMICAL TREATMENT
    - MULCH TREATMENT
  - ABOVE MEASURES SHALL BE DIRECTED IN THE FIELD BY THE PROJECT FORESTER, ARBORIST, NATURALIST, ECOLOGIST, SITE ENGINEER OR LANDSCAPE ARCHITECT.
  - TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION AND ONCE APPROVED BY THE CITY SITE INSPECTOR, MUST NOT BE ALTERED WITHOUT PRIOR APPROVAL BY THE CITY SITE INSPECTOR.
  - ACCESS TO FENCED AREAS WILL ONLY BE PERMITTED WITH THE PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE AND CITY SITE INSPECTOR.
  - DESIGNATED AERATION ZONES SHALL BE PROTECTED WITH TEMPORARY FENCING UNTIL FINAL GRADING.
  - ANY EXCAVATION OR GRADING REQUIRED WITHIN THE FENCED AREAS SHALL BE DONE AS DIRECTED AND APPROVED BY THE PERSON MENTIONED IN NOTE #5 AND THE CITY SITE INSPECTOR.
  - TREES, SHRUBS, OR UNDERGROWTH SHALL BE REMOVED FROM THE PROTECTED ROOT ZONE AREAS ONLY WHEN NECESSARY AND SHALL BE REMOVED BY HAND.
  - REFER TO TREE PROTECTION ACTION KEY FOR SPECIFIC TREATMENT OF EACH SPECIMEN TREE.
  - ATTACHMENT OF SIGNAGE, FENCING, ETC., TO TREES TO BE SAVED IS PROHIBITED.
  - AFTER CONSTRUCTION, ALL TEMPORARY BARRIERS, FENCING, DEBRIS, ETC., SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
  - NO SEED SHALL BE PLANTED WITHIN THE DESIGNATED ROOT ZONES FOR ALL TREES TO BE SAVED.

- DATA NOTES:
- HORIZONTAL LOCATIONS OF SANITARY SEWER LINES WERE LOCATED DURING FIELD SURVEY. ELEVATIONS WERE INTERPOLATED FROM SURVEY AND ARE FOR INFORMATIONAL PURPOSES ONLY. ONLY SEWER LINE CROSSINGS WITHIN THE LOD ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL SANITARY SEWER LINES.
  - PROPERTY BOUNDARIES AND EASEMENTS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT SERVE AS A BOUNDARY SURVEY.

ORCHARD RIDGE Forest Conservation Worksheet Orchard Ridge Stream Restoration			
Net Tract Area			
A.	Total Tract Area	A=	32.26 ac.
B.	Area within 100-year Floodplain (Based on modeled existing floodplain)	B=	3.88 ac.
C.	Area to Remain In Agricultural Production	C=	0.00 ac.
D.	Net Tract Area (D=(A-B-C))	D=	28.38 ac.
Land Use Category : Mixed Use and Planned Unit Development Areas			
E.	Afforestation Threshold (D x 15%)	E=	4.26 ac.
F.	Conservation Threshold (D x 15%)	F=	4.26 ac.
Existing Forest Cover			
G.	Existing Forest Cover (excluding floodplain)	G=	15.52 ac.
H.	Area of Forest Above Afforestation Threshold (1) If G<=E then H=0 and I=0, go to L (2) If G>E then H=G-E, go to I	H=	11.26 ac.
I.	Area of Forest Above Conservation Threshold (1) If G<=F then I=0, go to L (2) If G>F then I=G-F, go to J	I=	11.26 ac.
Break Even Point			
J.	Forest Retention Above Threshold with no Mitigation (1) If I>0 then J=( 0.2 x I ) +F, go to K (2) If I=0, J=0, go to L	J=	6.51 ac.
K.	Clearing Permitted Without Mitigation (K=G-J)	K=	9.01 ac.
Proposed Forest Clearing			
L.	Total Area of Forest to be Cleared	L=	0.87 ac.
M.	Total Area of Forest to be Retained (M=G-L)	M=	14.65 ac.
Planting Requirements			
N.	Reforestation for Clearing Above the Conservation Threshold (1) If L=K then N=0, P=0, Q=0, R=0, S=0, go to T (2) If M>F then N=L x 0.25, P=0, go to Q (3) If M<=F then N=L x .025, go to P	N=	0.22 ac.
P.	Reforestation for Clearing Below the Conservation Threshold (1) If G>F and M>F then P=0, Q=0, go to R (2) If G>F and M<=F then P=2.0 x ( F-M ), Q=0, go to R (3) If G<=F then P=2.0 x L, Q=0, go to R	P=	0.00 ac.
Q.	Credit for Retention Above the Conservation Threshold (1) If M>F then Q=M-F, go to R (2) If M<=F then Q=0, go to R	Q=	10.39 ac.
R.	Total Reforestation Required (1) If Q>N and M>E then R=0, S=0, go to T (2) If Q<=N and M>E then R=( N-P )-Q, S=0, go to T (3) If Q<=N and M<=E then R=N+P, go to S	R=	0.00 ac.
S.	Total Afforestation Required (1) If G<E and M<E then S=E-G, go to T (2) If G<E and M=E then S=0, go to T	S=	0.00 ac.
T.	Total Reforestation and Afforestation Requirement T=( R+S )	T=	0.00 ac.

- Note: Use 0 for all negative numbers that result from the calculations.
- FOREST CONSERVATION NOTES:
- NO SPECIMEN TREES (TREES > 30" DBH) WILL BE REMOVED.
  - ALL FOREST CLEARING (0.86 AC, 20 INDIVIDUAL TREES) WILL BE REPLACED AT A MINIMUM OF 1:1 WITH 2.5" CALIPER TREES PER CITY OF GAITHERSBURG REQUIREMENTS.
  - A PORTION OF THE PROJECT AREA IS LOCATED WITHIN AN EXISTING FOREST CONSERVATION EASEMENT (LIBER: 35236 FOLIO: 591).

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

- LEGEND
- LOD LIMIT OF DISTURBANCE
  - RE-AFFORESTATION  
38,055 SF / 0.87 AC
  - FOREST CLEARING
  - TREE PROTECTION PLANKING  
TREE TO BE REMOVED

**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**ORCHARD RIDGE FOREST  
PRESERVATION PLAN**

SEAL:	PROJECT NO.: 151078.03	
	SCALE: 1" = 40'	DATE: 1/31/2018
	DESIGN: AB/SH	CHECK: CL
	DWG NO: FC-01 OF 02	
	SHEET NO: 27 OF 45	



I:\2015\Transportation\151078.02 Great Seneca Hwy. SWM & Stream Rest\CADD\Lakelands\p05-P000\_Lakelands.dwg Oct 25, 2017 - 12:30pm

Lakelands Baseline of Construction																
POINT ID	PI	PI	PT	PC	LENGTH	RADIUS	Line/Chord Direction	START POINT	END POINT	DELTA	DEGREE	CENTER NORTHING	CENTER EASTING	EXTERNAL TANGENT	CHORD LENGTH	EXTERNAL DISTANCE
C9	1249102.5985,530793.9407	0+17.90			27.708	17.205	S26° 06' 37.13"W	1249096.4687,530810.7594	1249085.5501,530788.4820	092° 16' 14.40"	333° 00' 46.24"	530804.87	530804.87	17.90	24.81	7.62
C10	1249059.5836,530780.1679	0+54.97			28.250	12.322	S06° 33' 53.97"W	1249085.5501,530788.4820	1249082.9826,530766.1726	131° 21' 40.73"	464° 59' 54.93"	530776.75	530776.75	27.27	22.46	17.60
L2			0+55.96	0+61.81	5.856		S59° 06' 56.40"E	1249082.9826,530766.1726	1249088.0086,530763.1664							
C11	1249110.3828,530749.7841	0+87.89			32.125	15.549	S00° 04' 18.26"W	1249088.0086,530763.1664	1249087.9752,530736.4578	118° 22' 29.31"	368° 28' 55.55"	530749.82	530749.82	26.07	26.71	14.81
L3			0+93.94	1+09.70	15.756		S59° 15' 32.92"W	1249087.9752,530736.4578	1249074.4329,530728.4039							
C12	1249061.7818,530720.8800	1+24.41			22.688	13.993	S12° 48' 37.88"W	1249074.4329,530728.4039	1249069.9355,530708.6254	092° 53' 50.07"	409° 27' 19.89"	530716.38	530716.38	14.72	20.28	6.32
L4			1+32.38	1+39.28	6.896		S33° 38' 17.16"E	1249069.9355,530708.6254	1249073.7554,530702.8843							
C13	1249076.1729,530699.2509	1+43.64			8.526	16.207	S18° 34' 03.62"E	1249073.7554,530702.8843	1249076.4391,530694.8950	030° 08' 27.08"	353° 30' 56.10"	530693.91	530693.91	4.36	8.43	0.58
C14	1249077.0762,530684.4711	1+58.25			20.610	51.728	S07° 55' 00.10"W	1249076.4391,530694.8950	1249073.6192,530674.6165	022° 49' 40.36"	110° 45' 46.87"	530691.74	530691.74	10.44	20.47	1.04
C15	1249068.6137,530660.3474	1+83.54			30.143	151.039	S13° 36' 48.35"W	1249073.6192,530674.6165	1249066.5363,530645.3693	011° 26' 03.87"	037° 56' 03.90"	530624.62	530624.62	15.12	30.09	0.76
C16	1249064.2292,530628.7349	2+15.35			33.238	94.210	S18° 00' 12.27"W	1249066.5363,530645.3693	1249056.3165,530613.9223	020° 12' 51.71"	060° 49' 00.48"	530658.31	530658.31	16.79	33.07	1.49
L5			2+31.80	2+98.92	67.121		S28° 06' 38.12"W	1249056.3165,530613.9223	1249024.6906,530554.7186							
C17	1249019.3510,530544.7228	3+10.25			22.607	128.869	S33° 08' 10.23"W	1249024.6906,530554.7186	1249012.3488,530535.8123	010° 03' 04.22"	044° 27' 37.39"	530615.44	530615.44	11.33	22.58	0.50
C18	1248999.5364,530519.5084	3+42.26			40.636	82.803	S24° 06' 09.69"W	1249012.3488,530535.8123	1248995.9202,530499.0904	028° 07' 05.30"	069° 11' 43.06"	530484.65	530484.65	20.74	40.23	2.56
C8	1248992.9197,530482.1493	3+79.36			34.338	217.811	S05° 31' 38.13"W	1248995.9202,530499.0904	1248992.6162,530464.9473	009° 01' 57.81"	026° 18' 18.79"	530461.10	530461.10	17.20	34.30	0.68
C1	1248992.4344,530454.6478	4+06.80			20.544	111.660	S06° 16' 54.25"W	1248992.6162,530464.9473	1248990.3714,530444.5553	010° 32' 30.03"	051° 18' 45.22"	530466.92	530466.92	10.30	20.52	0.47
C2	1248982.6678,530406.8679	4+55.51			72.475	87.410	S35° 18' 19.57"W	1248990.3714,530444.5553	1248949.6753,530387.0897	047° 30' 20.61"	065° 32' 52.96"	530462.06	530462.06	38.47	70.42	8.09
C3	1248906.7108,530361.3335	5+39.61			89.281	78.971	S26° 40' 13.68"W	1248949.6753,530387.0897	1248911.7011,530311.4894	064° 46' 32.40"	072° 33' 09.22"	530319.36	530319.36	50.09	84.60	14.55
C4	1248915.0127,530278.4137	6+12.04			60.611	59.400	S23° 30' 52.42"W	1248911.7011,530311.4894	1248888.5539,530258.2914	058° 27' 49.88"	096° 27' 26.12"	530305.57	530305.57	33.24	58.02	8.67
C5	1248858.7106,530235.5951	6+76.90			69.400	73.943	S25° 51' 32.11"W	1248888.5539,530258.2914	1248859.3836,530198.1078	053° 46' 30.49"	077° 29' 10.66"	530199.44	530199.44	37.49	66.88	8.96

TRAVERSE POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
52	530810.33	1249050.00	364.58

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
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31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

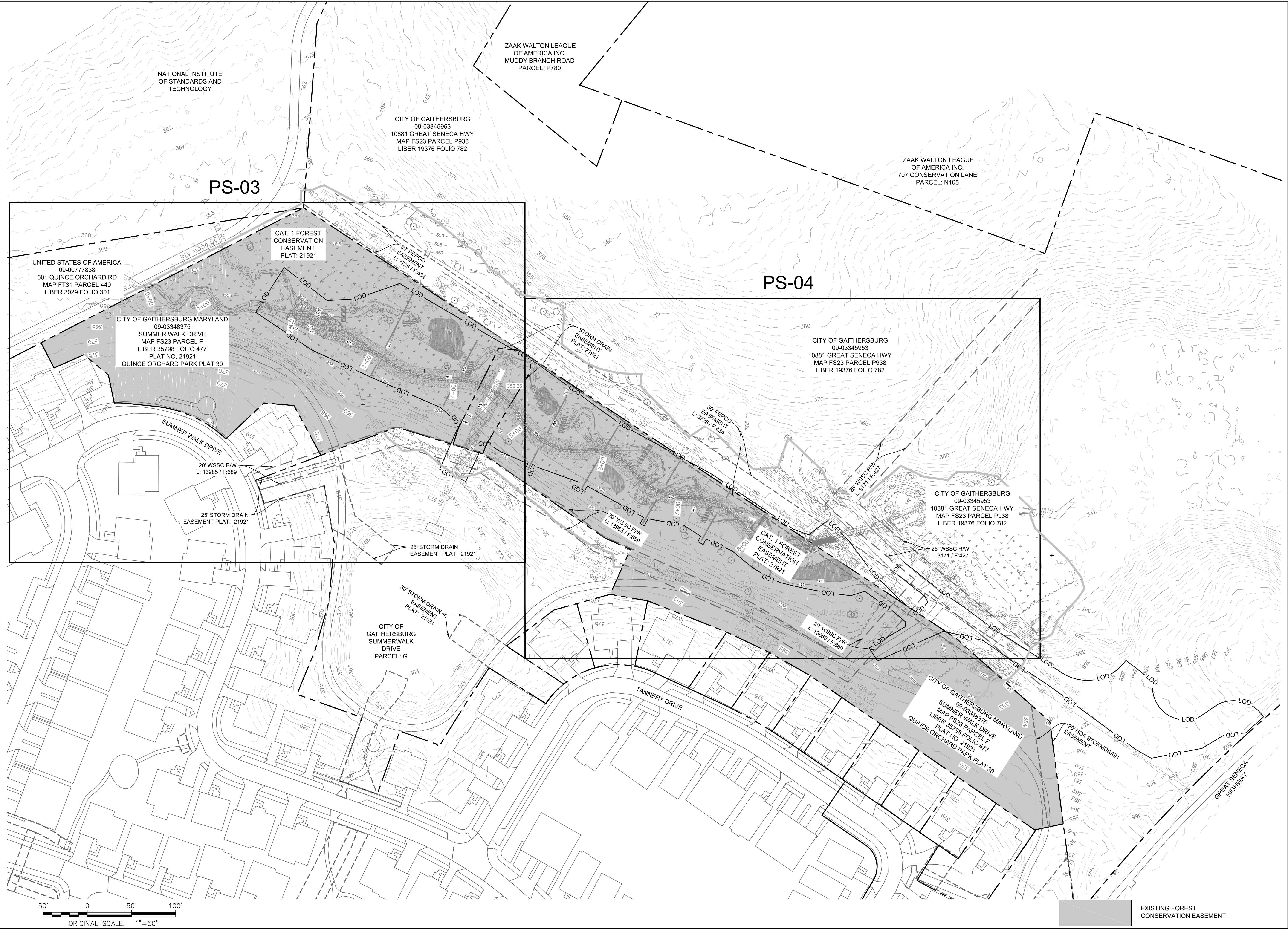
REVISIONS		
NO.	DATE	DESCRIPTION



**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:		GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT	
SHEET TITLE:		LAKELANDS GEOMETRY SHEET	
SEAL:	PROJECT NO.:	151078.02	
	SCALE:	1" = 40'	DATE: 10/25/2017
	DESIGN:	AB/SH	CHECK: CL
	DWG NO.:	GS-02 OF 02	
SHEET NO.:		28 OF 45	





CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

TOTAL LIMIT OF DISTURBANCE:  
77,232 S.F. / 1.77 AC.

**CENTURY**  
ENGINEERING

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**LAKELANDS OVERVIEW  
SHEET**

SEAL:

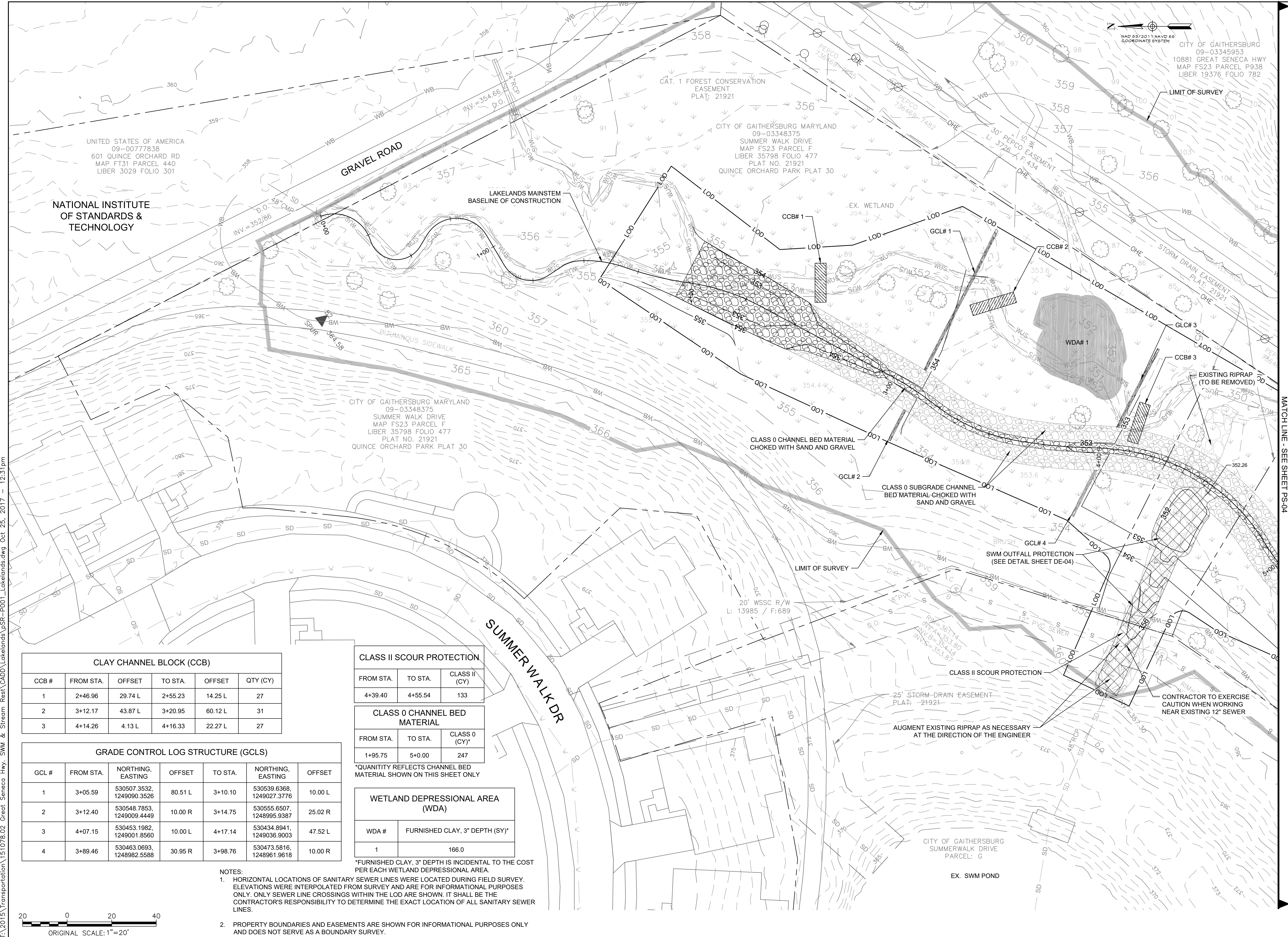
PROJECT NO.: 151078.03  
SCALE: 1" = 50'  
DESIGN: AB/SH  
DWG NO.:  
DATE: 10/25/2017  
CHECK: CL

OV-02 of 02

SHEET NO.: 29 of 45



T:\2015\Transportation\151078.02 Great Seneca Hwy, SWM & Stream Rest\ADD\Lakelands\PSR-P001-Lakelands.dwg Oct 25, 2017 - 12:31pm



CLAY CHANNEL BLOCK (CCB)					
CCB #	FROM STA.	OFFSET	TO STA.	OFFSET	QTY (CY)
1	2+46.96	29.74 L	2+55.23	14.25 L	27
2	3+12.17	43.87 L	3+20.95	60.12 L	31
3	4+14.26	4.13 L	4+16.33	22.27 L	27

GRADE CONTROL LOG STRUCTURE (GCLS)						
GCL #	FROM STA.	NORTHING, EASTING	OFFSET	TO STA.	NORTHING, EASTING	OFFSET
1	3+05.59	530507.3532, 1249090.3526	80.51 L	3+10.10	530539.6368, 1249027.3776	10.00 L
2	3+12.40	530548.7853, 1249009.4449	10.00 R	3+14.75	530555.6507, 1248995.9387	25.02 R
3	4+07.15	530453.1982, 1249001.8560	10.00 L	4+17.14	530434.8941, 1249036.9003	47.52 L
4	3+89.46	530463.0693, 1248982.5588	30.95 R	3+98.76	530473.5816, 1248961.9618	10.00 R

CLASS II SCOUR PROTECTION		
FROM STA.	TO STA.	CLASS II (CY)
4+39.40	4+55.54	133

CLASS 0 CHANNEL BED MATERIAL		
FROM STA.	TO STA.	CLASS 0 (CY)*
1+95.75	5+0.00	247

\*QUANTITY REFLECTS CHANNEL BED MATERIAL SHOWN ON THIS SHEET ONLY

WETLAND DEPRESSIONAL AREA (WDA)	
WDA #	FURNISHED CLAY, 3" DEPTH (SY)*
1	166.0

\*FURNISHED CLAY, 3" DEPTH IS INCIDENTAL TO THE COST PER EACH WETLAND DEPRESSIONAL AREA.

- NOTES:
- HORIZONTAL LOCATIONS OF SANITARY SEWER LINES WERE LOCATED DURING FIELD SURVEY. ELEVATIONS WERE INTERPOLATED FROM SURVEY AND ARE FOR INFORMATIONAL PURPOSES ONLY. ONLY SEWER LINE CROSSINGS WITHIN THE LOD ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL SANITARY SEWER LINES.
  - PROPERTY BOUNDARIES AND EASEMENTS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT SERVE AS A BOUNDARY SURVEY.



CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
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LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

PROPOSED FEATURES LEGEND

LIMIT OF DISTURBANCE LOD

PROPOSED MAJOR CONTOUR 375

PROPOSED MINOR CONTOUR 374

CLASS II SCOUR PROTECTION

CLASS 0 CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

CLASS 0 SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL

GRADE CONTROL LOG STRUCTURE (GCLS)

CLAY CHANNEL BLOCK (CCB)

WETLAND DEPRESSIONAL AREA (WDA)

PROJECT NAME:

**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:

**LAKELANDS STREAM  
RESTORATION PLAN**

SEAL:

PROJECT NO.: 151078.02  
SCALE: 1" = 20'  
DESIGN: AB/SH  
DWG NO:

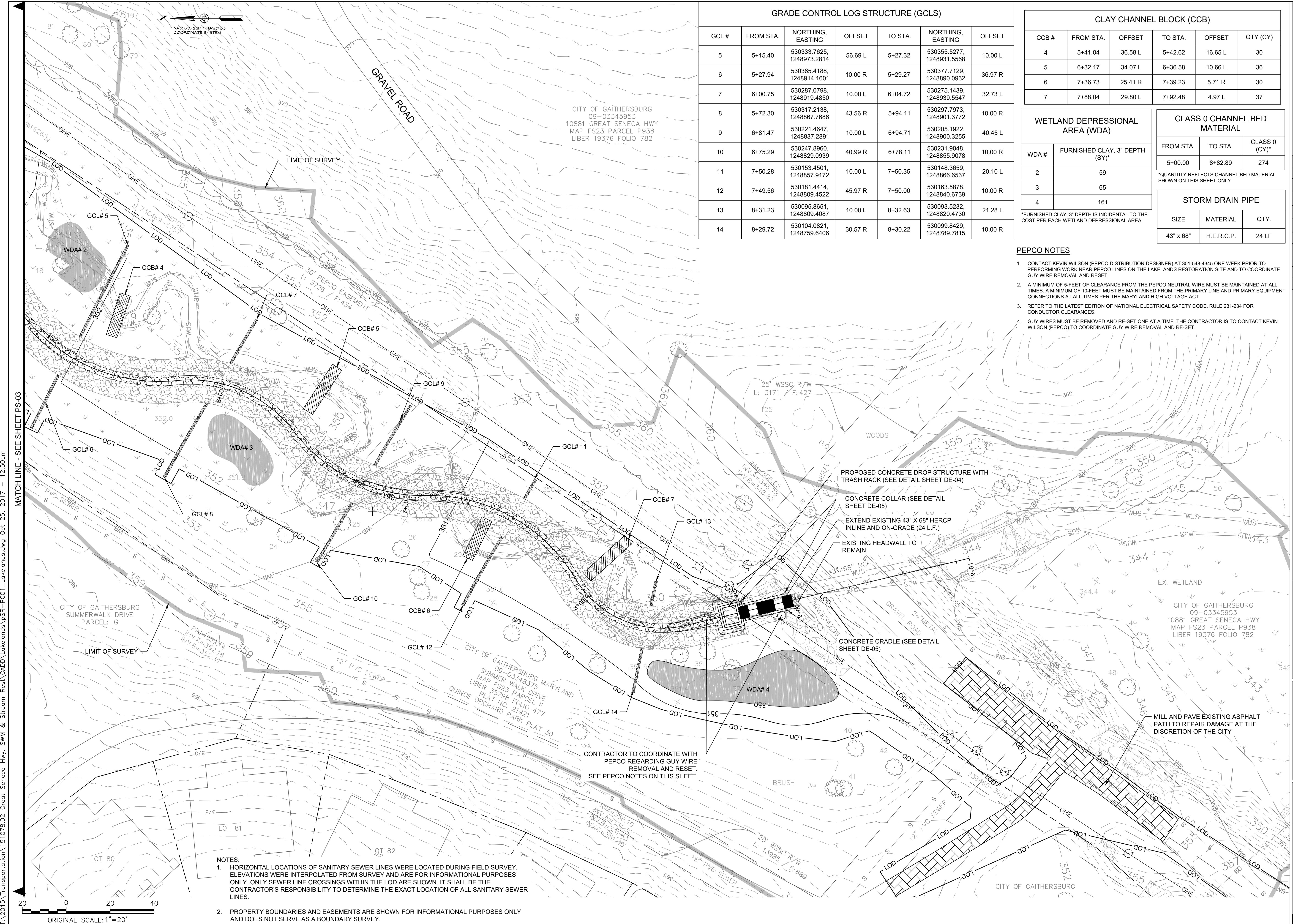
DATE: 10/25/2017  
CHECK: CL

PS-03 OF 04

SHEET NO.: 30 OF 45



T:\2015\Transportation\151078.02 Great Seneca Hwy, SWM & Stream Rest\GDD\Lakelands\PSR-P001-Lakelands.dwg Oct 25, 2017 - 12:50pm



- NOTES:
- HORIZONTAL LOCATIONS OF SANITARY SEWER LINES WERE LOCATED DURING FIELD SURVEY. ELEVATIONS WERE INTERPOLATED FROM SURVEY AND ARE FOR INFORMATIONAL PURPOSES ONLY. ONLY SEWER LINE CROSSINGS WITHIN THE LOD ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL SANITARY SEWER LINES.
  - PROPERTY BOUNDARIES AND EASEMENTS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT SERVE AS A BOUNDARY SURVEY.

GRADE CONTROL LOG STRUCTURE (GCLS)						
GCL #	FROM STA.	NORTHING, EASTING	OFFSET	TO STA.	NORTHING, EASTING	OFFSET
5	5+15.40	530333.7625, 1248973.2814	56.69 L	5+27.32	530355.5277, 1248931.5568	10.00 L
6	5+27.94	530365.4188, 1248914.1601	10.00 R	5+29.27	530377.7129, 1248890.0932	36.97 R
7	6+00.75	530287.0798, 1248919.4850	10.00 L	6+04.72	530275.1439, 1248939.5547	32.73 L
8	5+72.30	530317.2138, 1248867.7686	43.56 R	5+94.11	530297.7973, 1248901.3772	10.00 R
9	6+81.47	530221.4647, 1248837.2891	10.00 L	6+94.71	530205.1922, 1248900.3255	40.45 L
10	6+75.29	530247.8960, 1248829.0939	40.99 R	6+78.11	530231.9048, 1248855.9078	10.00 R
11	7+50.28	530153.4501, 1248857.9172	10.00 L	7+50.35	530148.3659, 1248866.6537	20.10 L
12	7+49.56	530181.4414, 1248809.4522	45.97 R	7+50.00	530163.5878, 1248840.6739	10.00 R
13	8+31.23	530095.8651, 1248809.4087	10.00 L	8+32.63	530093.5232, 1248820.4730	21.28 L
14	8+29.72	530104.0821, 1248759.6406	30.57 R	8+30.22	530099.8429, 1248789.7815	10.00 R

CLAY CHANNEL BLOCK (CCB)					
CCB #	FROM STA.	OFFSET	TO STA.	OFFSET	QTY (CY)
4	5+41.04	36.58 L	5+42.62	16.65 L	30
5	6+32.17	34.07 L	6+36.58	10.66 L	36
6	7+36.73	25.41 R	7+39.23	5.71 R	30
7	7+88.04	29.80 L	7+92.48	4.97 L	37

WETLAND DEPRESSIONAL AREA (WDA)		
WDA #	FURNISHED CLAY, 3" DEPTH (SY)	
2	59	
3	65	
4	161	

\*FURNISHED CLAY, 3" DEPTH IS INCIDENTAL TO THE COST PER EACH WETLAND DEPRESSIONAL AREA.

CLASS 0 CHANNEL BED MATERIAL		
FROM STA.	TO STA.	CLASS 0 (CY)
5+00.00	8+82.89	274

\*QUANTITY REFLECTS CHANNEL BED MATERIAL SHOWN ON THIS SHEET ONLY

STORM DRAIN PIPE		
SIZE	MATERIAL	QTY.
43" x 68"	H.E.R.C.P.	24 LF

- PEPCO NOTES**
- CONTACT KEVIN WILSON (PEPCO DISTRIBUTION DESIGNER) AT 301-548-4345 ONE WEEK PRIOR TO PERFORMING WORK NEAR PEPCO LINES ON THE LAKELANDS RESTORATION SITE AND TO COORDINATE GUY WIRE REMOVAL AND RESET.
  - A MINIMUM OF 5-FEET OF CLEARANCE FROM THE PEPCO NEUTRAL WIRE MUST BE MAINTAINED AT ALL TIMES. A MINIMUM OF 10-FEET MUST BE MAINTAINED FROM THE PRIMARY LINE AND PRIMARY EQUIPMENT CONNECTIONS AT ALL TIMES PER THE MARYLAND HIGH VOLTAGE ACT.
  - REFER TO THE LATEST EDITION OF NATIONAL ELECTRICAL SAFETY CODE, RULE 231-234 FOR CONDUCTOR CLEARANCES.
  - GUY WIRES MUST BE REMOVED AND RE-SET ONE AT A TIME. THE CONTRACTOR IS TO CONTACT KEVIN WILSON (PEPCO) TO COORDINATE GUY WIRE REMOVAL AND RE-SET.

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

**PROPOSED FEATURES LEGEND**

LIMIT OF DISTURBANCE — LOD —

PROPOSED MAJOR CONTOUR — 375 —

PROPOSED MINOR CONTOUR — 374 —

CLASS II SCOUR PROTECTION [Pattern]

CLASS 0 CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL [Pattern]

CLASS 0 SUBGRADE CHANNEL BED MATERIAL CHOKED WITH SALVAGED SAND AND GRAVEL [Pattern]

GRADE CONTROL LOG STRUCTURE (GCLS) [Symbol]

CLAY CHANNEL BLOCK (CCB) [Symbol]

WETLAND DEPRESSIONAL AREA (WDA) [Symbol]

DROP STRUCTURE [Symbol]

STORM DRAIN PIPE [Symbol]

EXISTING ASPHALT PATH TO BE REPAIRED [Pattern]

**CENTURY ENGINEERING**

CONSULTING ENGINEERS - PLANNERS

10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

**GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT**

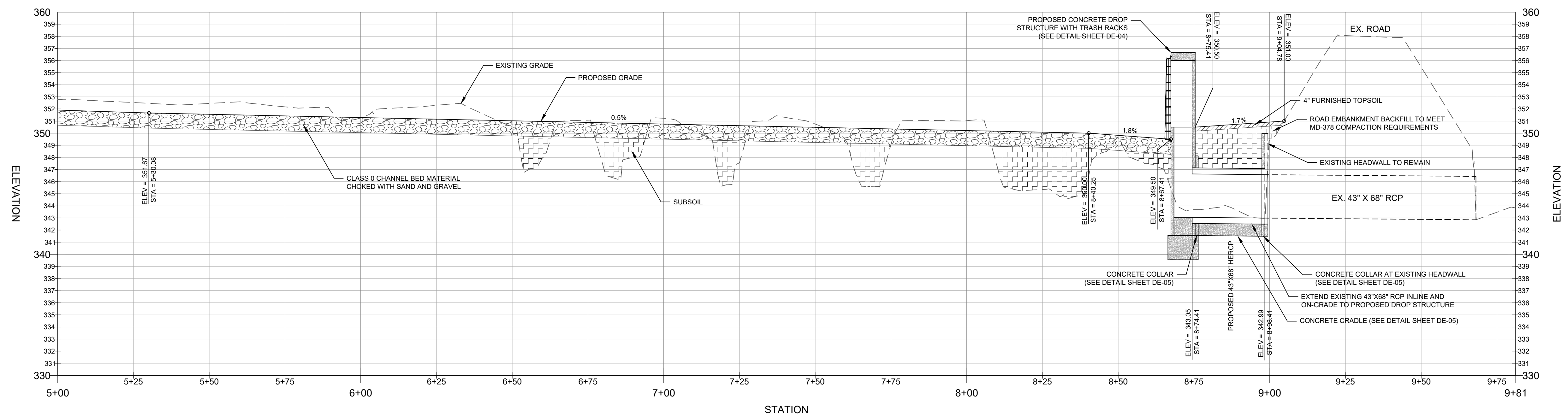
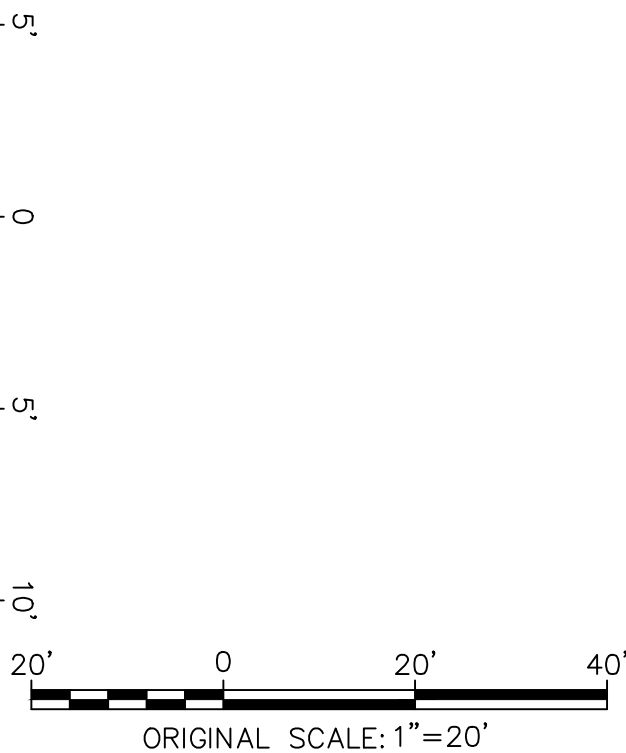
SHEET TITLE:

**LAKELANDS STREAM RESTORATION PLAN**

SEAL:	PROJECT NO: 151078.02
	SCALE: 1" = 20'
	DATE: 10/25/2017
	DESIGN: AB/SH
	CHECK: CL
	DWG NO:
	PS-04 OF 04
	SHEET NO:
	31 OF 45



LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

[illegible]

**mm CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

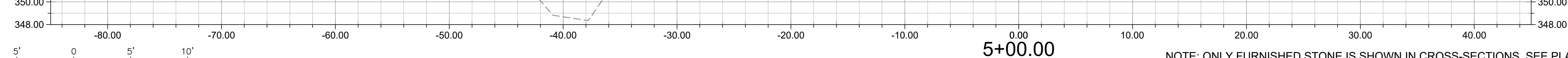
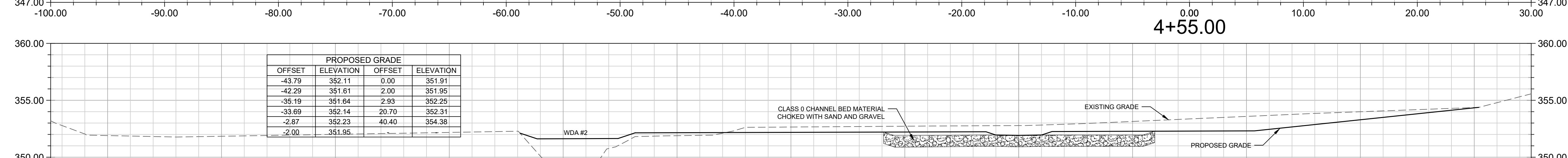
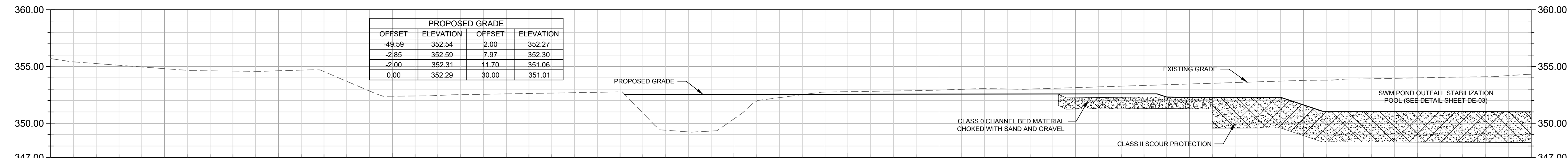
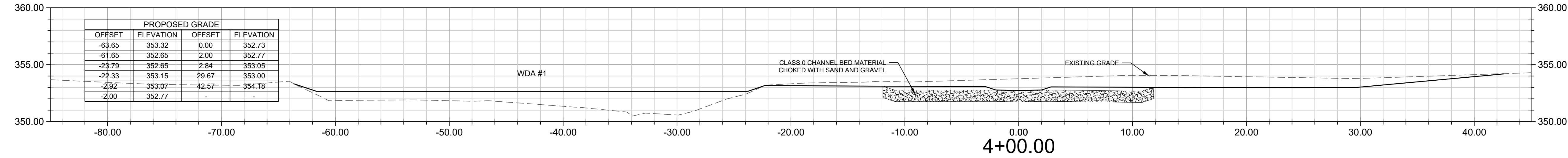
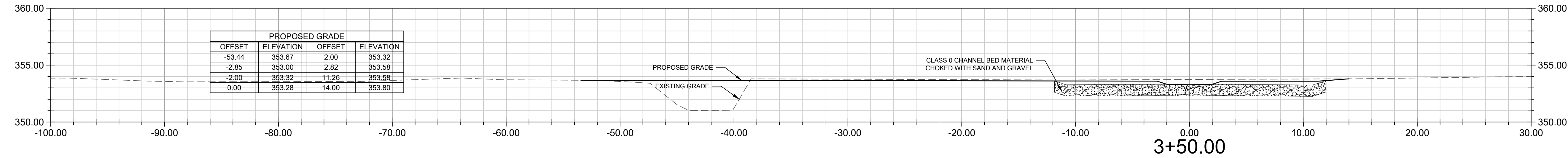
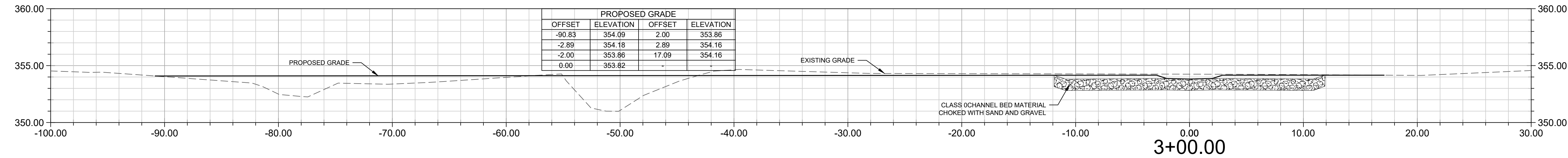
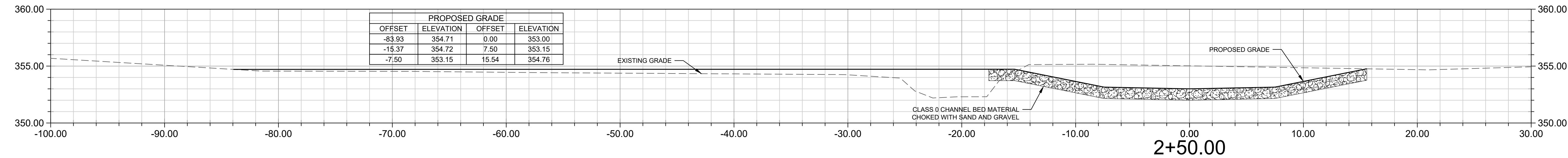
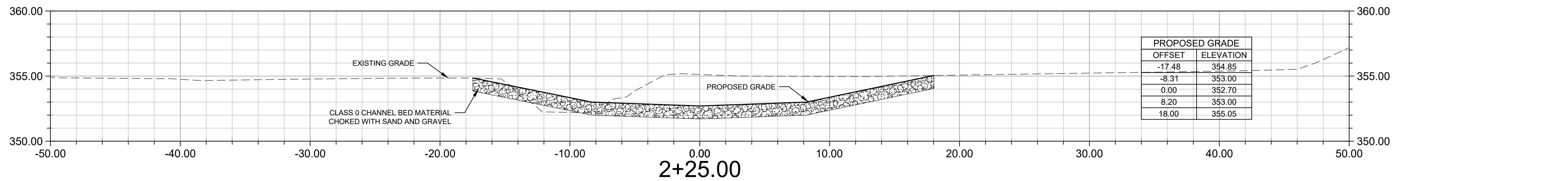
GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE:

LAKELANDS STREAM  
PROFILE

SEAL:	PROJECT NO:	151078.02	
	SCALE:	AS SHOWN	DATE: 10/26/2017
	DESIGN:	AB/SH	CHECK: CL
	DWG NO:		
	PR-02 OF 02		
SHEET NO:			
32 OF 45			





NOTE: ONLY FURNISHED STONE IS SHOWN IN CROSS-SECTIONS. SEE PLAN VIEW AND DETAIL SHEETS FOR INFORMATION AND EXACT LOCATIONS OF CLAY CHANNEL BLOCKS, GRADE CONTROL LOGS, FURNISHED TOPSOIL, AND SELECT BORROW.

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317


LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

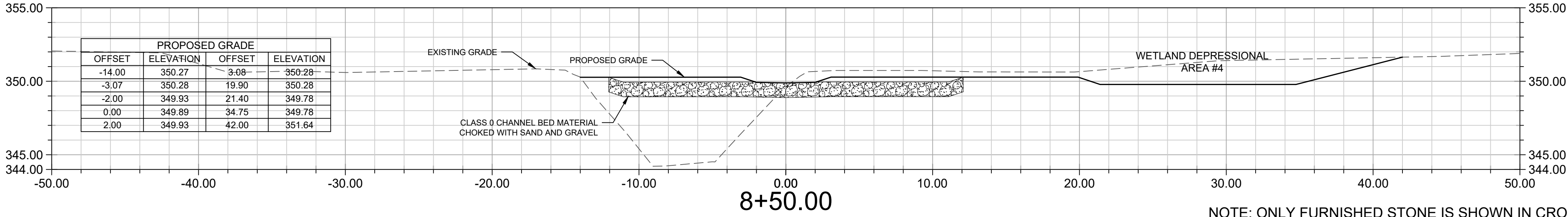
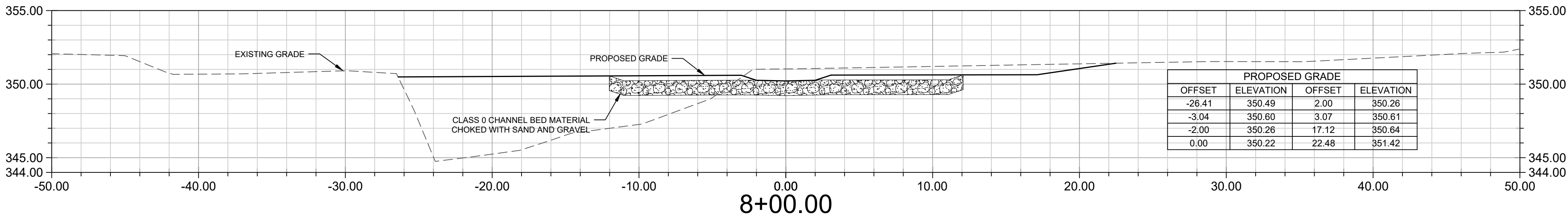
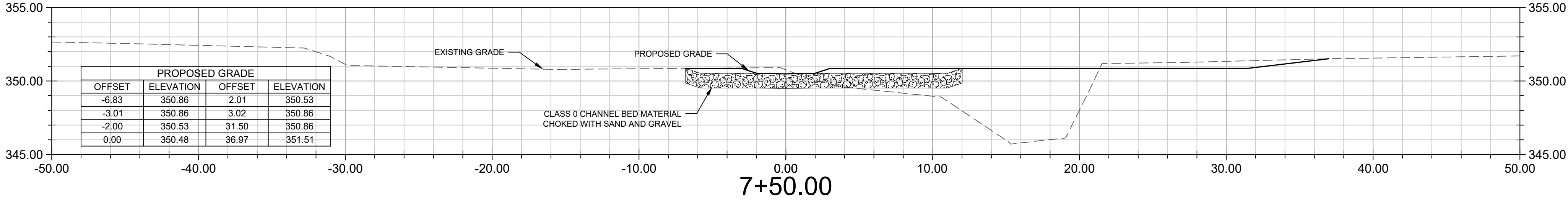
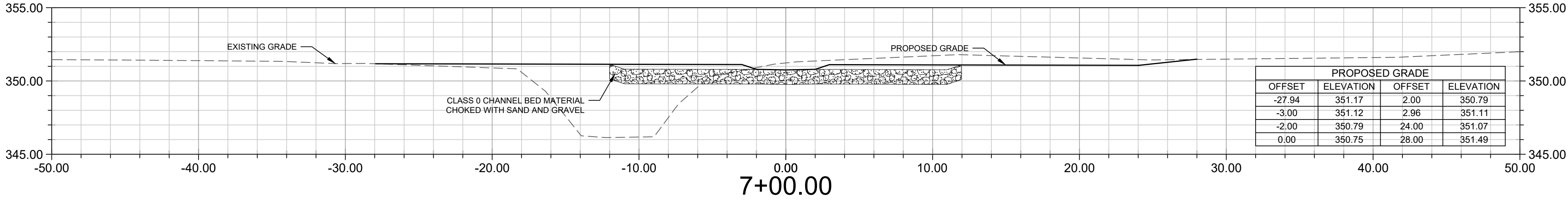
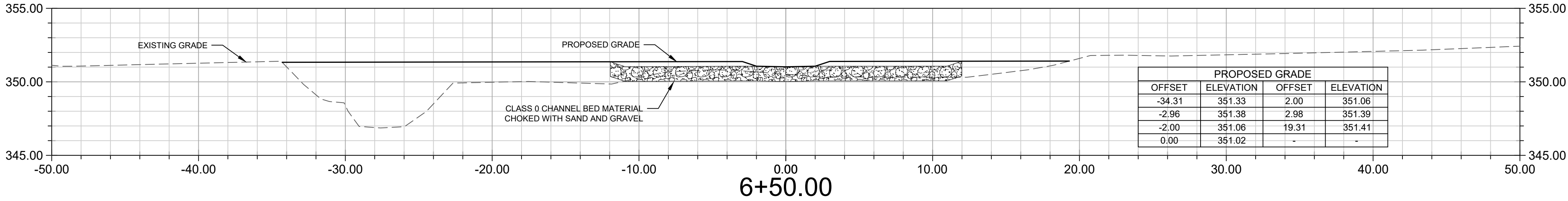
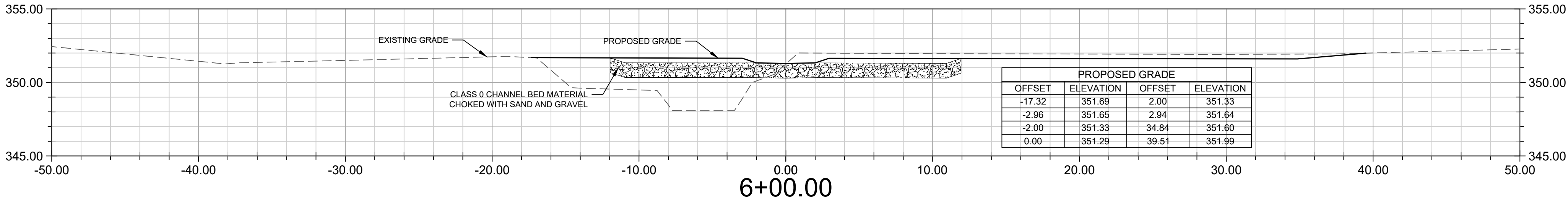
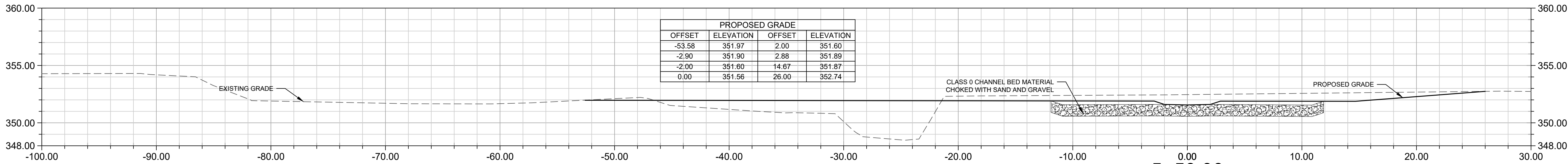
**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS  
CROSS-SECTION SHEET**

SEAL:   
PROJECT NO: 151078.03  
SCALE: 1" = 5'  
DATE: 10/25/2017  
DESIGN: AB/SH  
CHECK: CL  
DWG NO:  
SHEET NO:  
**CS-04 of 05**  
33 of 45





NOTE: ONLY FURNISHED STONE IS SHOWN IN CROSS-SECTIONS. SEE PLAN VIEW AND DETAIL SHEETS FOR INFORMATION AND EXACT LOCATIONS OF CLAY CHANNEL BLOCKS, GRADE CONTROL LOGS, FURNISHED TOPSOIL, AND SELECT BORROW.

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

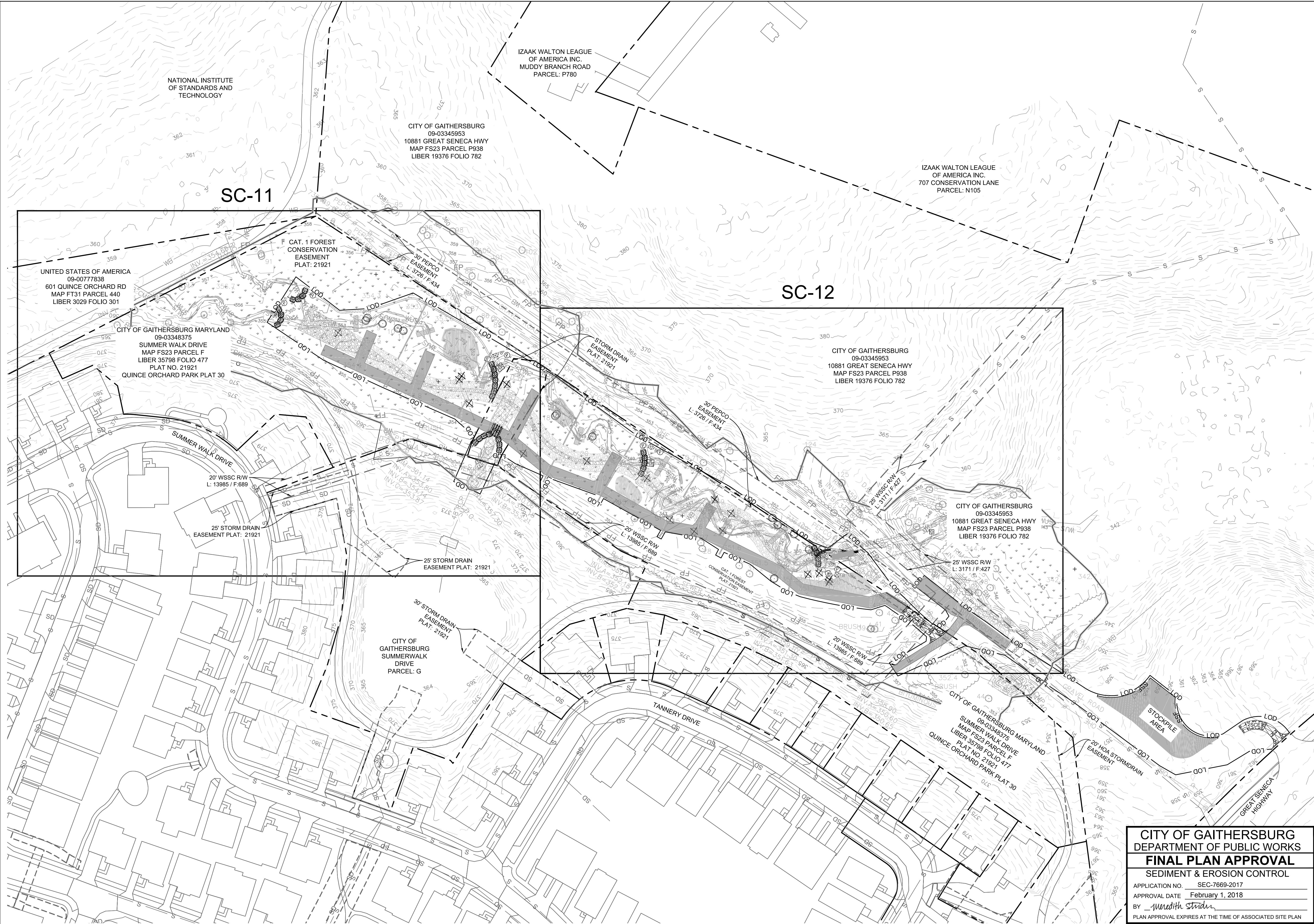
**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS  
CROSS-SECTION SHEET**

	PROJECT NO.: 151078.03	DATE: 10/25/2017
	SCALE: 1" = 5'	CHECK: CL
	DESIGN: AB/SH	
	DWG NO.: CS-05 OF 05	SHEET NO.: 34 OF 45





CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

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CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

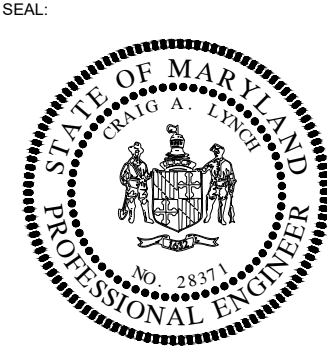
TOTAL LIMIT OF DISTURBANCE:  
81,507 S.F. / 1.87 AC.

**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS E&SC  
OVERVIEW SHEET**

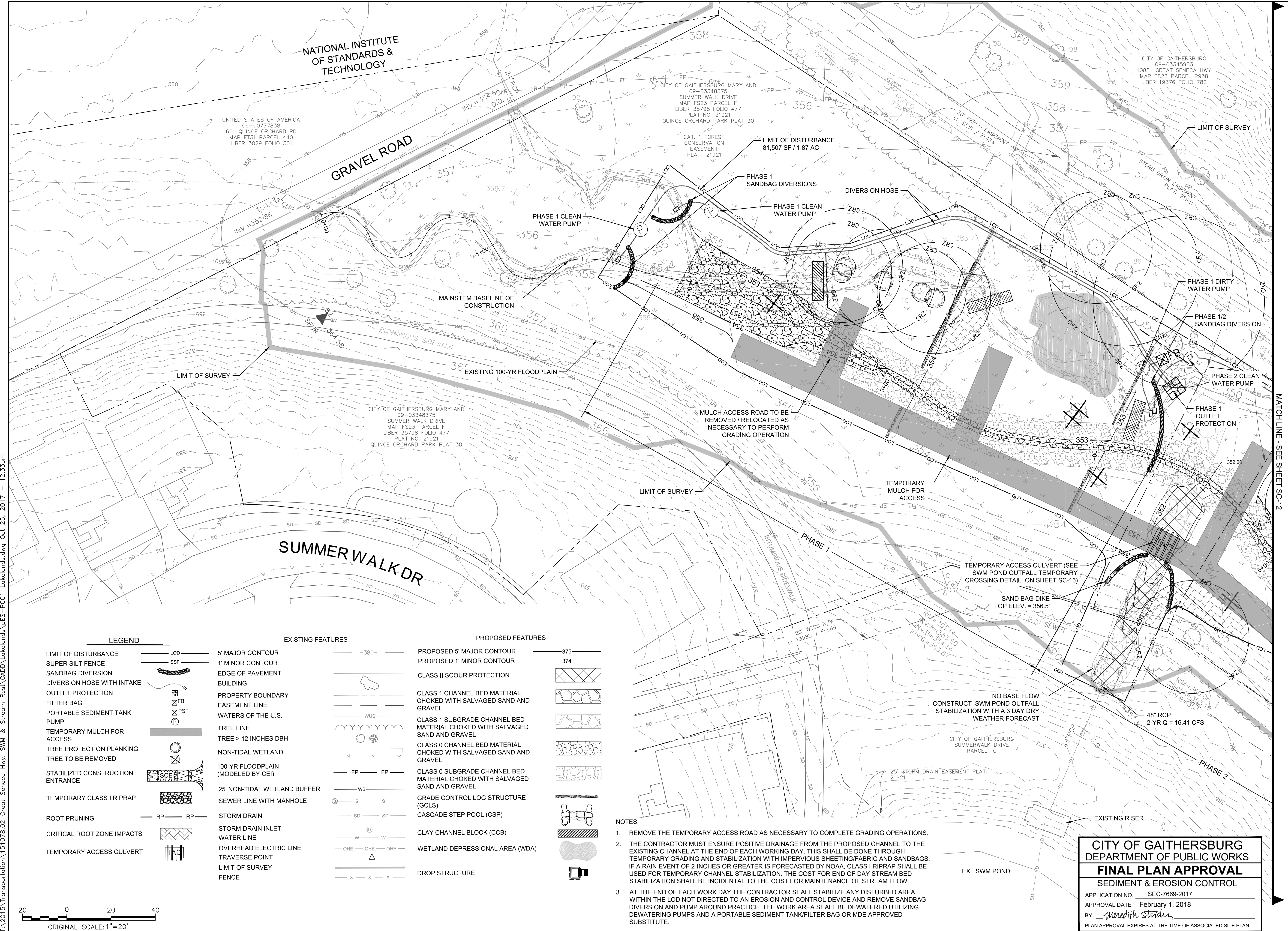
**CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
FINAL PLAN APPROVAL**  
SEDIMENT & EROSION CONTROL  
APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY *Meredith Strider*  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN



PROJECT NO.: 151078.03  
SCALE: 1" = 50'  
DESIGN: AB/SH  
DWG NO.:  
DATE: 10/25/2017  
CHECK: CL  
SC-10 of 15  
SHEET NO.:  
35 of 45



T:\2015\Transportation\151078.02 Great Seneca Hwy. SWM & Stream Rest\GADD\Lakelands.dwg Oct 25, 2017 - 12:33pm



CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

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31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

TOTAL LIMIT OF DISTURBANCE:  
81,507 S.F. / 1.87 AC.

**CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS E&S  
CONTROL PLAN**

SEAL:

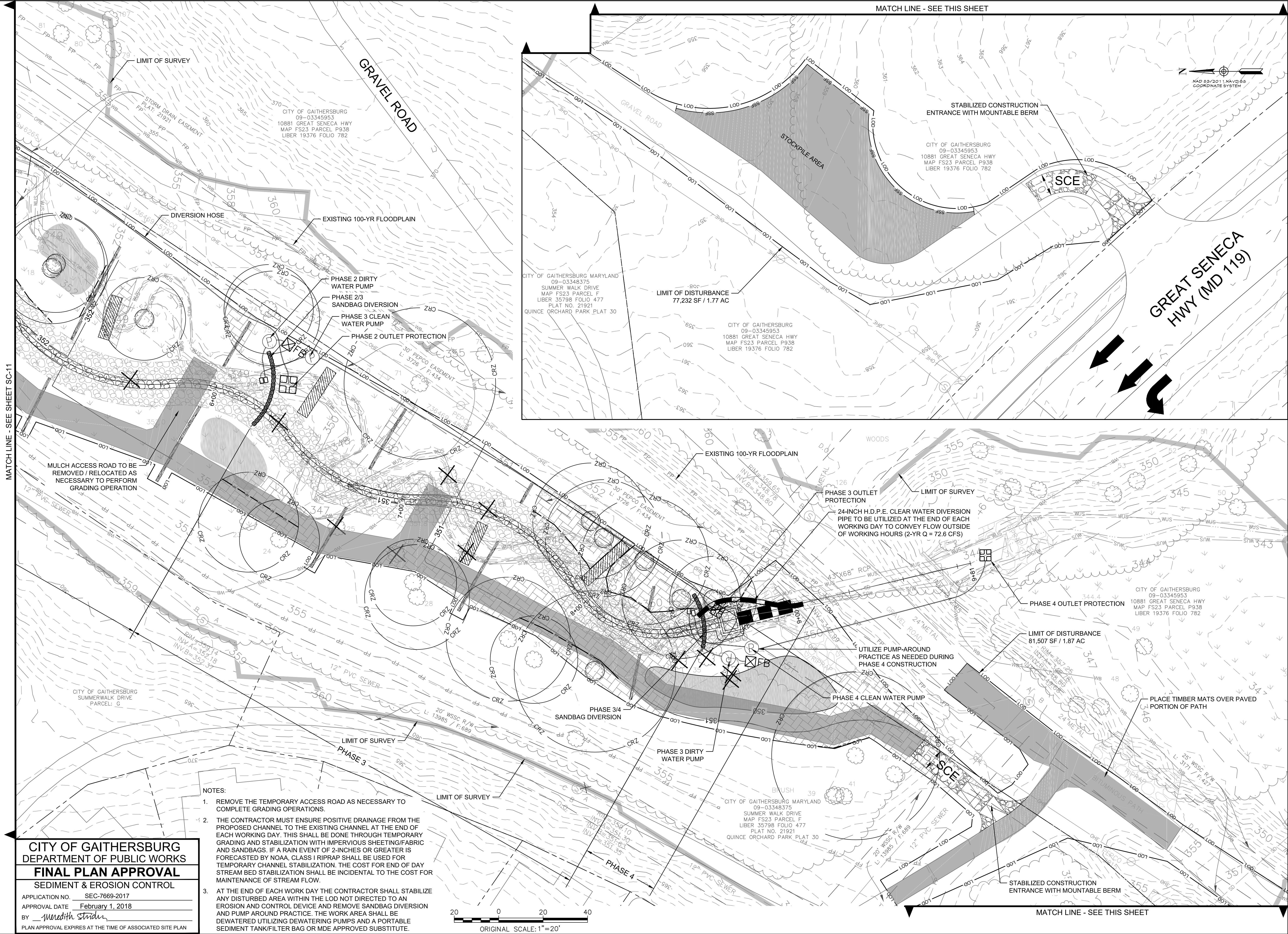
PROJECT NO.: 151078.02  
SCALE: 1" = 20'  
DESIGN: AB/SH  
DWG NO.: SC-11 of 06  
SHEET NO.: 36 of 45

DATE: 10/25/2017  
CHECK: CL

**CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
FINAL PLAN APPROVAL**  
SEDIMENT & EROSION CONTROL  
APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY *Meredith Strain*  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN



T:\2015\Transportation\151078.02 Great Seneca Hwy. SWM & Stream Rest\AAD\lakelands\pES-P001\_Lakelands.dwg Oct 25, 2017 - 12:34pm



CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

TOTAL LIMIT OF DISTURBANCE:  
81,507 S.F. / 1.87 AC.

**CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS E&S  
CONTROL PLAN**

SEAL:

PROJECT NO:	151078.02
SCALE:	1" = 20'
DESIGN:	AB/SH
DWG NO:	
SHEET NO:	37 of 45

DATE:	10/25/2017
CHECK:	CL

SC-12 of 15



City of Gaithersburg Department of Public Works  
STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. The permittee shall notify the City of Gaithersburg Permits and Inspections Division at 301-258-6336, 48 hours before commencing any land disturbing activity and shall be required to hold a pre-construction meeting between himself or his representative, and authorized representatives of the City.
2. The permittee must obtain inspection and approval by Planning and Code Enforcement at the following points:
- a. At the required pre-construction meeting.
- b. Following installation of sediment control measures and prior to any other land disturbing activity.
- c. During the installation of a sediment basin or stormwater management structure at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction is mandatory.
- d. Prior to removal or modification of any sediment control devices.
- e. Prior to final acceptance.
3. All erosion control measures are to be constructed and maintained in accordance with applicable published standards and specifications and the most current "Maryland Standards and Specifications for Soil Erosion and Sediment Control."
4. The permittee shall construct all erosion and sediment control measures per the approved plan and construction sequence, shall have them inspected and approved by the City Inspector prior to beginning any other land disturbances, shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measures without prior permission from City Inspector.
5. Any request for changes to the sediment control plan or sequence of construction must be submitted to the Sediment Control Inspector and approved before implementing changes. Major changes will require a plan revision, including approval by the Montgomery Soil Conservation District.
6. The permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.
7. The permittee shall inspect daily and maintain continuously in effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from Department of Planning and Code Enforcement.
8. All sediment basins, trap embankments, swales, perimeter dikes and permanent slopes steeper or equal to 3:1 shall be stabilized with sod, seed and anchored straw mulch, or other approved stabilization measures, within three (3) calendar days of establishment. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization. Restabilization or overseeding will be required, if necessary.
9. The permittee shall apply sod, seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas within 7 calendar days after stripping and grading activities have ceased on that area. Maintenance shall be performed as necessary to ensure continued stabilization. Active construction areas such as borrow or stockpile areas, roadway improvements, and areas within 50 feet of a building under construction may be exempted from this requirement, provided that erosion and sediment control measures are installed and maintained to protect those areas.
10. Prior to removal of sediment control measures the permittee shall stabilize all contributory disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mulch. Wood fiber mulch may only be used in seeding season to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within 7 calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15th.
11. The site work, materials, approved SC and SWM plans and any required test reports shall be available at the site for inspection by duly authorized officials of the City of Gaithersburg.
12. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or installing mechanical devices to lower the water downslope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.
13. Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting or by other approved stabilization measures.
14. Temporary sediment control devices shall be removed, with permission of the City Inspector, within (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. If establishment is not full and uniform as determined by the Sediment Control Inspector, overseeding will be required. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
15. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in areas that are not to be maintained provided that those areas are indicated on the erosion control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.
16. The permittee shall install splashblock at the bottom of each downspout unless the downspout is connected by a drain line to an acceptable outlet.
17. All water pumped from excavation during construction shall be pumped either to sediment tanks and/or sediment traps. No water will be pumped to the storm drain system. Dewatering shall be performed in accordance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
18. For finished grading, the permittee shall provide adequate gradients so as to: (1) prevent water from standing on the surface of lawns more than 24 hours after the end of a rainfall, except in designated courses and swale flow areas which may drain as long as 48 hours after the end of a rainfall, and (2) provide positive drainage away from all building foundations or openings.
19. Sediment traps and basins are not permitted within 20 feet of a building which is existing or under construction. No building may be constructed within 20 feet of a sediment trap or basin.
20. All inlets in non-swamp areas shall have asphalt berms installed at the time of base paving establishment.
21. The sediment control inspector has the option of requiring additional sediment control measures, if deemed necessary.
22. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.
23. Vegetative stabilization shall be performed in accordance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
24. Temporary sediment trap(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to a point one half (1/2) the depth between the outlet crest and the bottom of the trap.
25. Sediment removed from traps shall be placed and stabilized in approved areas in such a manner that it does not foul existing or proposed storm drainage systems or areas already stabilized. Sediment shall not be placed within a flood plain or wetland.
26. All sediment basins and traps must be surrounded with a welded wire safety fence. The fence must be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height, with a minimum of 14-gauge wire. Safety fence must be maintained in good condition at all times.
27. No excavation in the area of existing utilities is permitted unless their location has been determined. Call Miss Utility at 1-800-257-7777 48 hours prior to the start of work.
28. Off-site spoil or borrow areas must have approved SC plans.
29. Protect all trees to be preserved during construction in accordance with the approved Forest Conservation Plan and Forest Stand Delineation.
30. Permittee is responsible for all actions of subcontractors, including repairing damages of sediment control devices.

LAKELANDS STREAM RESTORATION PROJECT  
SEQUENCE OF CONSTRUCTION

PHASE 1:

1. 72 HOURS PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR IS TO HAVE ALL LIMIT OF DISTURBANCE (LOD) AND SEDIMENT AND EROSION CONTROL DEVICES STAKED OUT IN THE FIELD FOR REVIEW AND APPROVAL BY THE CITY. CLEARING LIMITS SHALL BE ROUGH STAKED IN ORDER TO FACILITATE LOCATION FOR TRENCHING AND FENCING INSTALLATION. CONTACT MISS UTILITY AND THE CITY OF GAITHERSBURG TO HAVE ALL UTILITIES MARKED. THIS STREAM HAS BEEN DESIGNATED AS A MARYLAND USE CLASS I-P AND IS THEREFORE SUBJECT TO STREAM CLOSURE FROM MARCH 1 TO JUNE 15, INCLUSIVE, DURING ANY YEAR. NO IN STREAM WORK CAN BE DONE DURING THIS PERIOD.
2. PRIOR TO ANY CLEARING OR GRADING OR SEDIMENT EROSION PROTECTION INSTALLATION MEASURES, THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH CITY PROJECT MANAGER (240-805-1317); THE FOREST INSPECTOR; THE DESIGN PROJECT MANAGER; THE CITY SEDIMENT CONTROL/DPW SEDIMENT CONTROL INSPECTOR; AND WSSC (301-206-4004). ALL PARTIES REQUIRE SEVEN DAYS NOTICE. NO CLEARING OR GRADING SHALL BEGIN IN AREAS WHERE TREE TREATMENT AND PRESERVATION MEASURES HAVE NOT BEEN COMPLETED. CITY SEDIMENT CONTROL/DPW SEDIMENT CONTROL INSPECTOR MUST APPROVE ALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO STARTING WORK.
3. MANUALLY INSTALL HIGH VISIBILITY ORANGE CONSTRUCTION FENCE ALONG THE LIMITS OF DISTURBANCE AND TREE PROTECTION PLANKING (SEE EROSION & SEDIMENT CONTROL PLAN).
4. CLEAR FOR AND INSTALL THE TEMPORARY MULCH FOR ACCESS, TIMBER MATS, STABILIZED CONSTRUCTION ENTRANCE, SUPER SILT FENCE, AND STOCKPILE AREA.
5. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 1+75 TO 4+00. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 1 STREAM CONSTRUCTION.
6. CONSTRUCT THE PROPOSED STREAM CHANNEL, ASSOCIATED FLOODPLAIN, AND STRUCTURES BETWEEN STATIONS 1+75 TO 4+00, WORKING FROM UPSTREAM TO DOWNSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE PROPOSED CHANNEL TO THE EXISTING CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS.
7. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM FOR GRADING OPERATIONS.
8. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND OWNER'S REPRESENTATIVE, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 1, WITH THE PERMISSION OF THE INSPECTOR AND THE OWNER'S REPRESENTATIVE, PROCEED TO PHASE 2.

PHASE 2

1. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 4+00 TO 6+00. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 2 STREAM CONSTRUCTION.
2. WORKING FROM UPSTREAM TO DOWNSTREAM, CONSTRUCT THE PROPOSED STREAM CHANNEL, ASSOCIATED FLOODPLAIN AND STRUCTURES, AND THE SWM POND OUTFALL STABILIZATION. CONSTRUCTION OF THE SWM POND OUTFALL STABILIZATION SHALL BE PERFORMED WITH A 3 DAY DRY WEATHER FORECAST. CONSTRUCTION OF THE PROPOSED STREAM CHANNEL SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE EXISTING CHANNEL TO THE PROPOSED CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS.
3. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
4. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND DESIGNER, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 2, WITH THE PERMISSION OF THE INSPECTOR AND THE OWNER'S REPRESENTATIVE, PROCEED TO PHASE 3.

PHASE 3

1. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 6+00 TO 8+25. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 3 STREAM CONSTRUCTION.
2. CONSTRUCT THE PROPOSED STREAM CHANNEL, ASSOCIATED FLOODPLAIN, AND STRUCTURES BETWEEN STATIONS 6+00 TO 8+25, WORKING FROM UPSTREAM TO DOWNSTREAM. CONSTRUCTION SHALL BE PERFORMED SUCH THAT THE WORK AREA OF DISTURBANCE CAN BE STABILIZED AT THE END OF EACH WORKING DAY, ENSURING POSITIVE DRAINAGE IS MAINTAINED FROM THE EXISTING CHANNEL TO THE PROPOSED CHANNEL. THIS SHALL BE COMPLETED THROUGH TEMPORARY GRADING AND IMPERVIOUS SHEETING/FABRIC. IF A RAIN EVENT OF 2-INCHES OR GREATER WITHIN 24 HOURS IS FORECASTED BY NOAA THEN CLASS I RIPRAP SHALL BE USED FOR TEMPORARY STREAMBED STABILIZATION. IN ADDITION TO STREAM STABILIZATION, DAILY PUMP AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS.
3. REMOVE TEMPORARY MULCH FOR ACCESS AS NECESSARY FROM UPSTREAM TO DOWNSTREAM.
4. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN

TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.

5. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
6. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND OWNER'S REPRESENTATIVE, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
7. UPON COMPLETION AND STABILIZATION OF PHASE 3, WITH THE PERMISSION OF THE INSPECTOR AND OWNER'S REPRESENTATIVE, PROCEED TO PHASE 4.

PHASE 4

1. PRIOR TO FABRICATION OF PRE-CAST CONCRETE DROP STRUCTURE, CONTRACTOR TO OBTAIN APPROVAL OF SHOP DRAWINGS FROM THE OWNER AND ENGINEER AND ACCEPTANCE BY THE CITY.
2. CONTACT KEVIN WILSON (PEPCO DISTRIBUTION DESIGNER) AT 301-548-4345 ONE WEEK PRIOR TO PERFORMING ANY WORK NEAR PEPCO LINES OR GUY WIRES AND TO COORDINATE GUY WIRE REMOVAL AND RESET.
3. INSTALL PERIMETER CONTROLS AND PUMP AROUND PRACTICE AS NECESSARY TO PERFORM IN STREAM WORK FROM STATIONS 8+25 TO 9+08. PERFORM ONLY THE NECESSARY CLEARING AND GRUBBING OPERATIONS NECESSARY FOR PHASE 4 STREAM CONSTRUCTION.
4. UTILIZE A DAILY PUMP AROUND OPERATION AS NEEDED TO PERFORM IN-STREAM WORK. THE PUMP-AROUND OPERATIONS SHALL BE INSTALLED AND REMOVED FROM THE STREAM EACH WORKING DAY. UTILIZE A CLEAR WATER DIVERSION AS SHOWN ON THE CONTRACT DOCUMENTS TO MAINTAIN STREAM FLOW DURING NON-WORKING HOURS. ENSURE STREAM FLOW IS MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL EMPLOY THE USE OF DEWATERING FILTER BAGS OR A PORTABLE SEDIMENT TANK AS NECESSARY TO PERFORM GRADING OPERATIONS IN DRY CONDITIONS. THE DIVERSION HOSE SHALL BE DISCHARGED IN A NON-EROSIVE MANNER AS SHOWN ON THE DETAIL SHEETS. THE CONTRACTOR SHALL SIZE PUMPING OPERATIONS ADEQUATELY TO DIVERT STREAM BASE FLOW. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS THAT DO NOT DRAIN TO AN MDE APPROVED SEDIMENT CONTROL MEASURE. SET AND RE-SET PUMP AROUND PRACTICE AND ASSOCIATED CONTROLS AS NEEDED TO PERFORM GRADING OPERATIONS ON A DAILY BASIS.
5. EXCAVATE FOR THE PRE-CAST DROP STRUCTURE, CONCRETE CRADLE, 43" X 68" H.E.R.C.P. AND CONCRETE COLLARS.
6. OBTAIN APPROVAL OF THE SUB-GRADE FOR THE CONCRETE DROP STRUCTURE AND CRADLE FROM THE GEOTECHNICAL ENGINEER-OF-RECORD.
7. INSTALL 43" X 68" H.E.R.C.P. PIPE, CONCRETE CRADLE, AND CONCRETE COLLAR AT THE EXISTING HEADWALL.
8. INSTALL FOUNDATION SECTION FOR THE PRE-CAST CONCRETE DROP STRUCTURE.
9. INSTALL THE REMAINING SECTIONS OF THE PRE-CAST CONCRETE DROP STRUCTURE AND ALL APPURTENANCES, CONCRETE COLLAR, AND COMPLETE REMAINING STREAM CHANNEL TO TIE INTO DROP STRUCTURE.
10. SEED AREA PER THE LANDSCAPE PLAN. PERMANENT SEED MUST BE APPLIED PRIOR TO PERMANENTLY STABILIZING AREA WITH COIR 1000 MATTING.
11. UPON PERMANENT STABILIZATION OF THE WORK AREA, AND WITH APPROVAL FROM THE INSPECTOR AND DESIGNER, THE CONTRACTOR MAY REMOVE E&SC DEVICES. ANY AREAS DISTURBED BY REMOVING THE E&SC DEVICES SHALL BE STABILIZED IMMEDIATELY.
5. PLANT TREES, SHRUBS, AND PLUGS, AND SEED ALL REMAINING AREAS PER THE LANDSCAPE PLAN.
6. CONDUCT A PUNCH LIST WALK-THROUGH WITH THE CITY PROJECT MANAGER, THE DESIGN PROJECT MANAGER, THE CITY SEDIMENT CONTROL INSPECTOR, AND THE OWNER'S REPRESENTATIVE AND CORRECT ANY OUTSTANDING ITEMS.
7. WITH WRITTEN APPROVAL FROM THE CITY SEDIMENT CONTROL INSPECTOR AND APPROVAL FROM THE OWNER'S REPRESENTATIVE, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES.

BEST MANAGEMENT PRACTICES FOR WORKING IN  
NONTIDAL WETLANDS, WETLAND BUFFERS,  
WATERWAYS, AND 100-YEAR FLOODPLAINS

1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
2. Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
3. Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
4. Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
5. Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the floodplain in excess of that lost under the originally authorized structure or fill.
- 100-year 6. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
7. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. **Kentucky 31 fescue shall not be utilized in wetland or buffer areas.** The area should be seeded and mulched to reduce erosion after construction activities have been completed.
8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
9. To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
- Use I-P waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

CITY OF GAITHERSBURG DEPARTMENT OF PUBLIC WORKS	
FINAL PLAN APPROVAL	
SEDIMENT & EROSION CONTROL	
APPLICATION NO.	SEC-7669-2017
APPROVAL DATE	February 1, 2018
BY	<i>Meredith Strain</i>
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN	

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

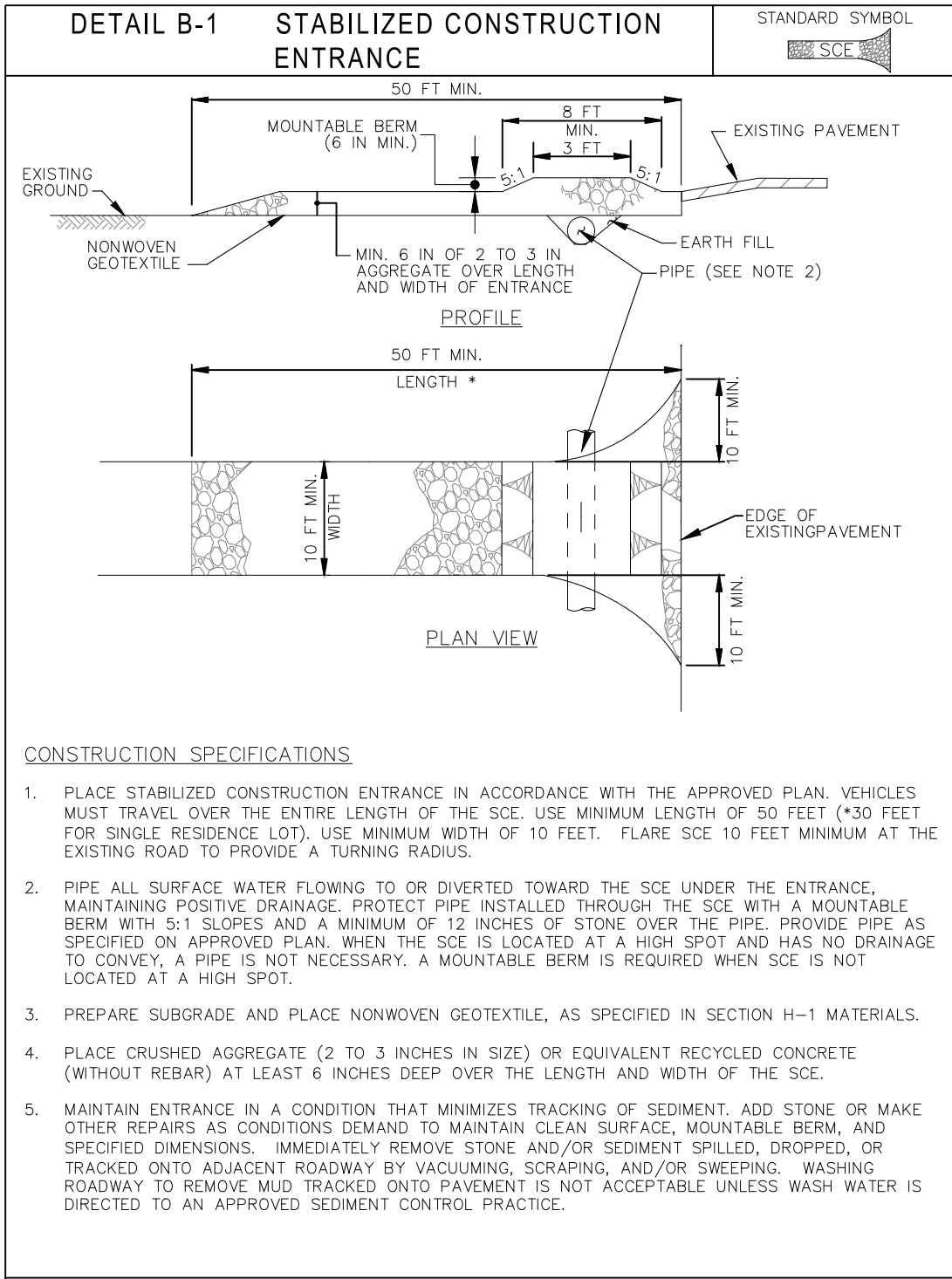
REVISIONS		
NO.	DATE	DESCRIPTION

**MM CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

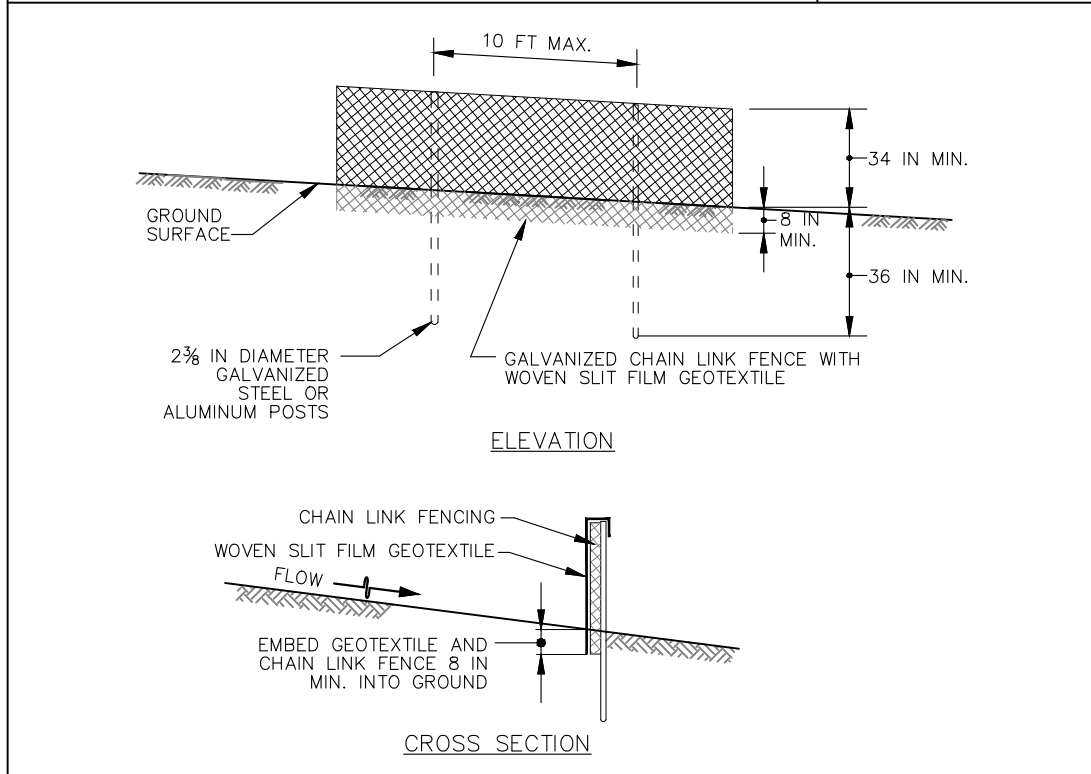
PROJECT NAME:	
GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT	
SHEET TITLE:	
LAKELANDS E&S CONTROL NOTES	
SEAL:	PROJECT NO: 151078.02 SCALE: N.T.S. DATE: 10/25/2017 DESIGN: AB/SH CHECK: CL DWG NO: SC-13 OF 15 SHEET NO: 38 OF 45



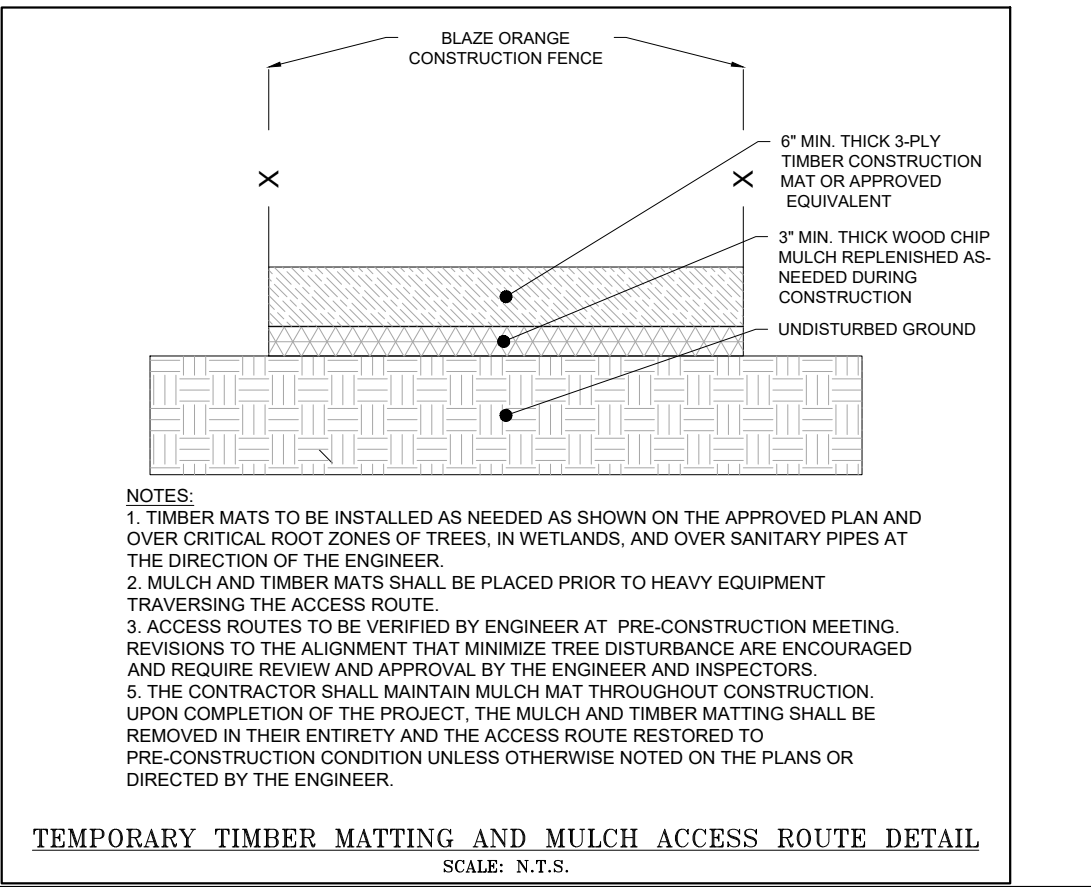
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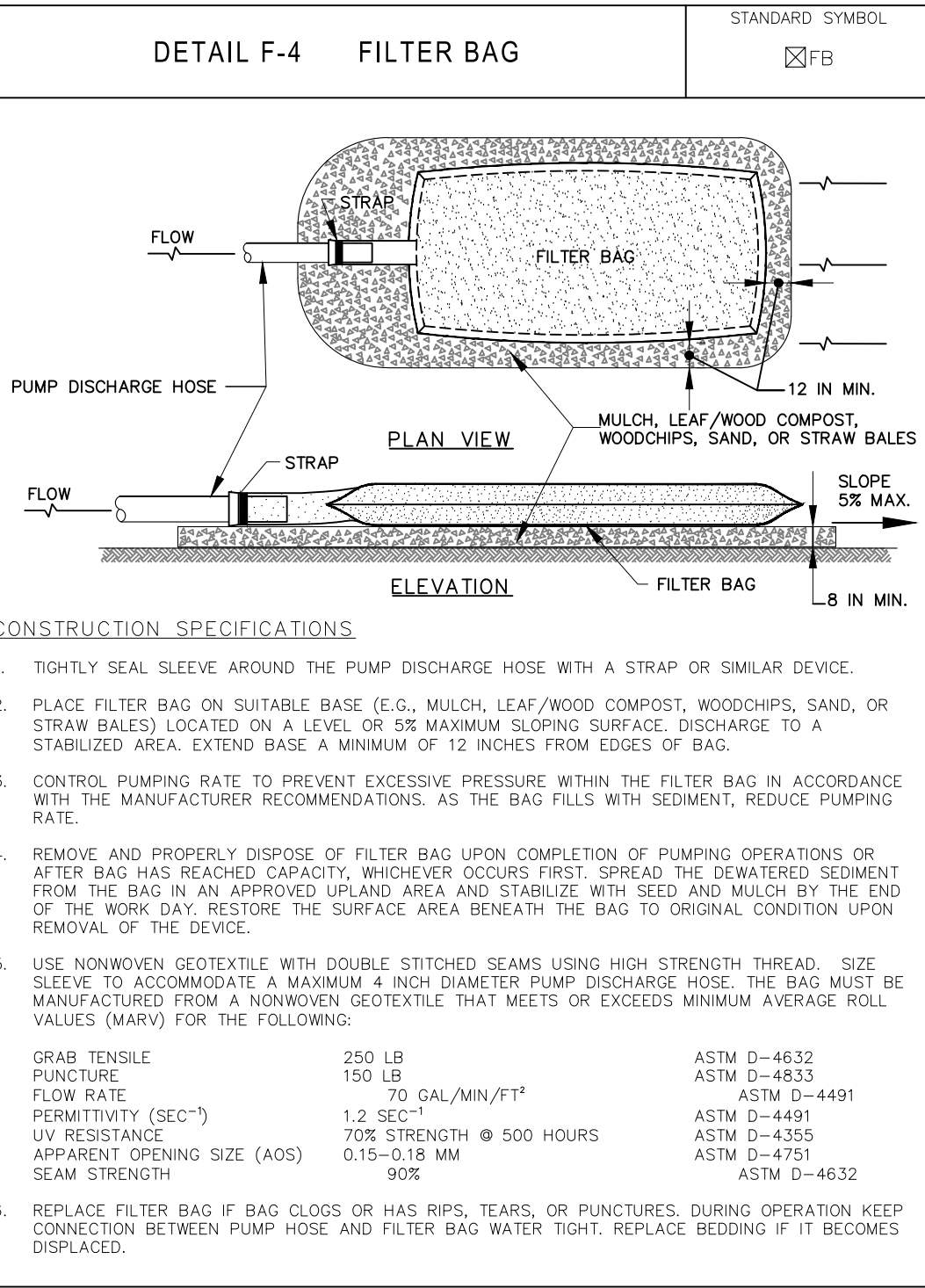
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



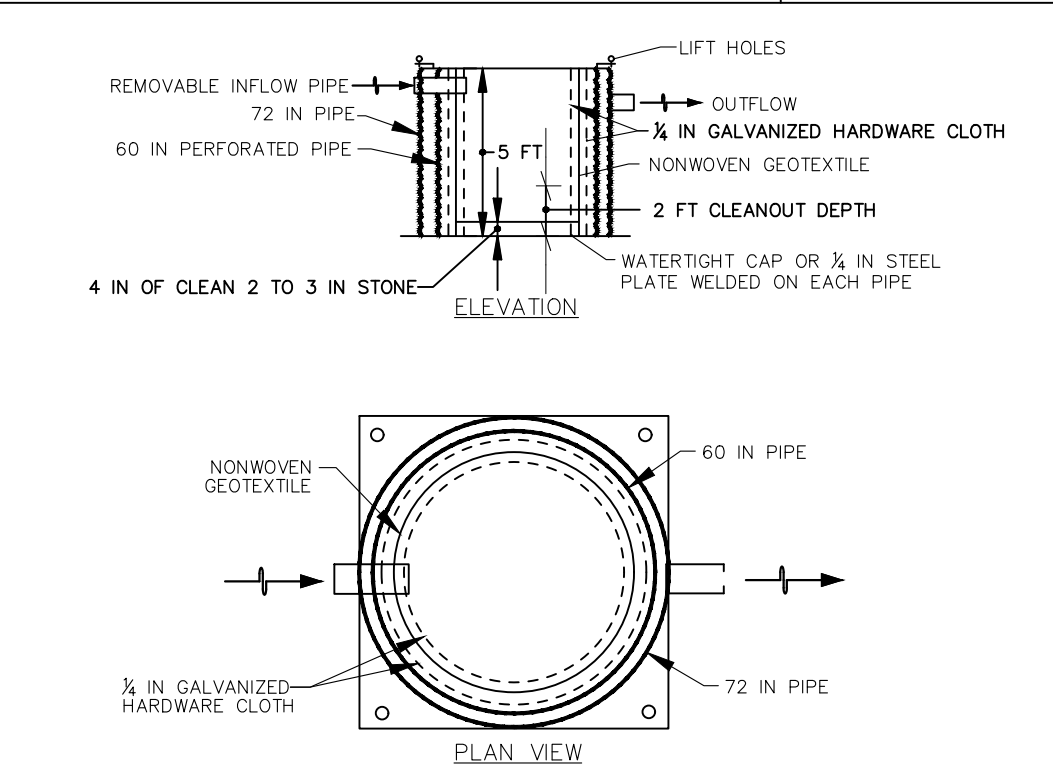
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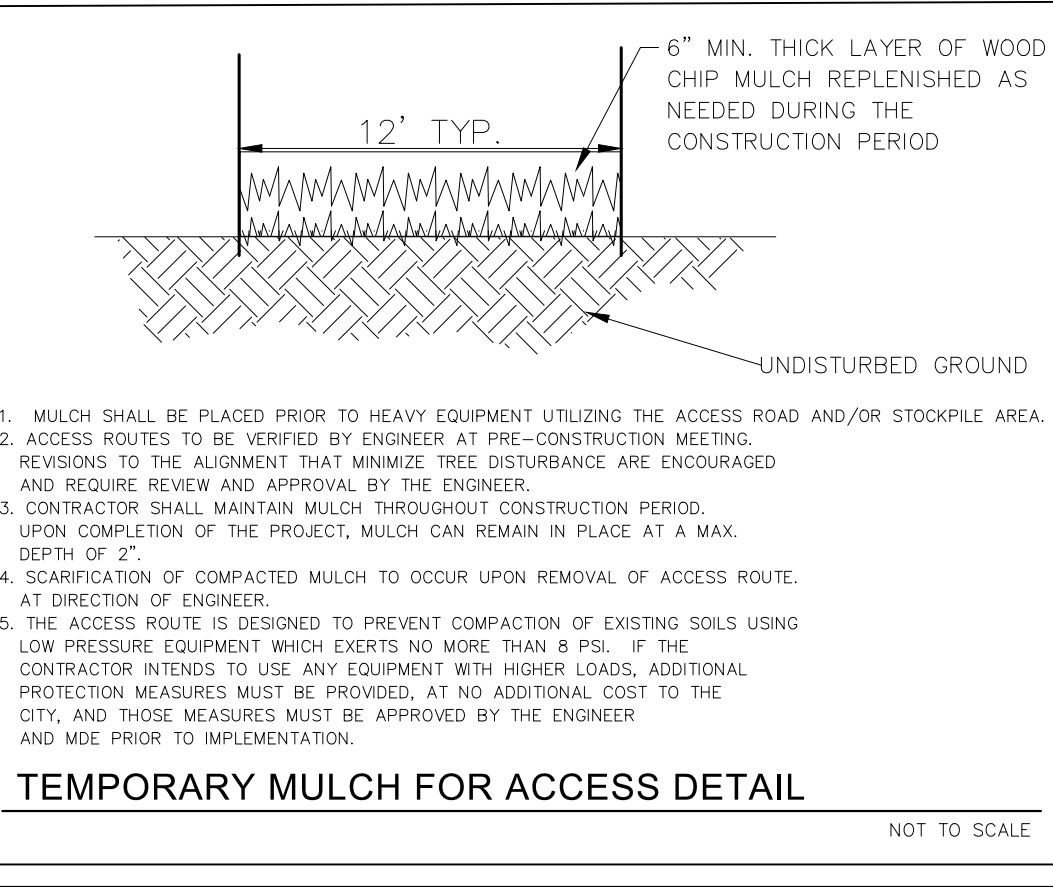
TEMPORARY TIMBER MATTING AND MULCH ACCESS ROUTE DETAIL  
SCALE: N.T.S.



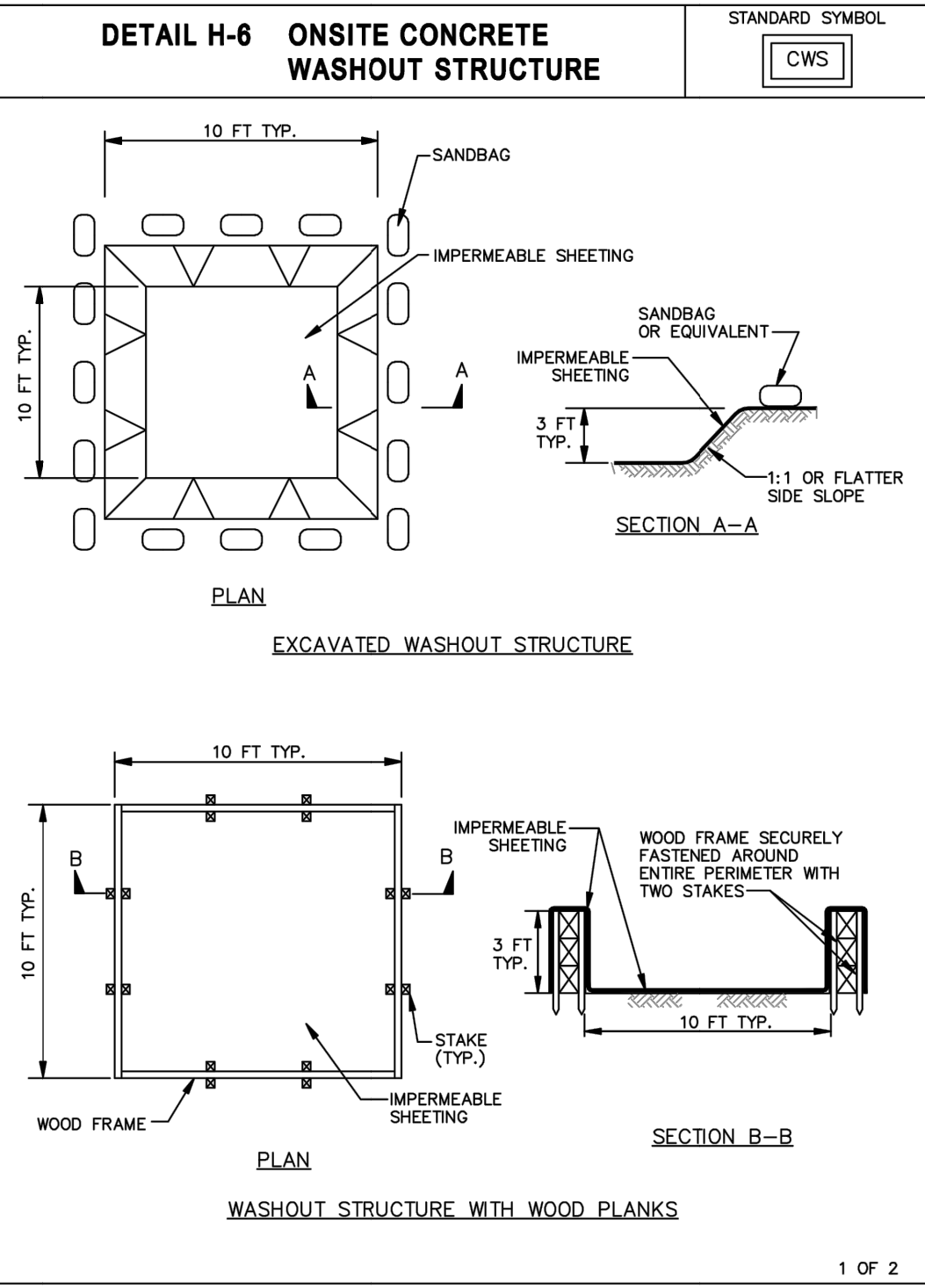
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U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



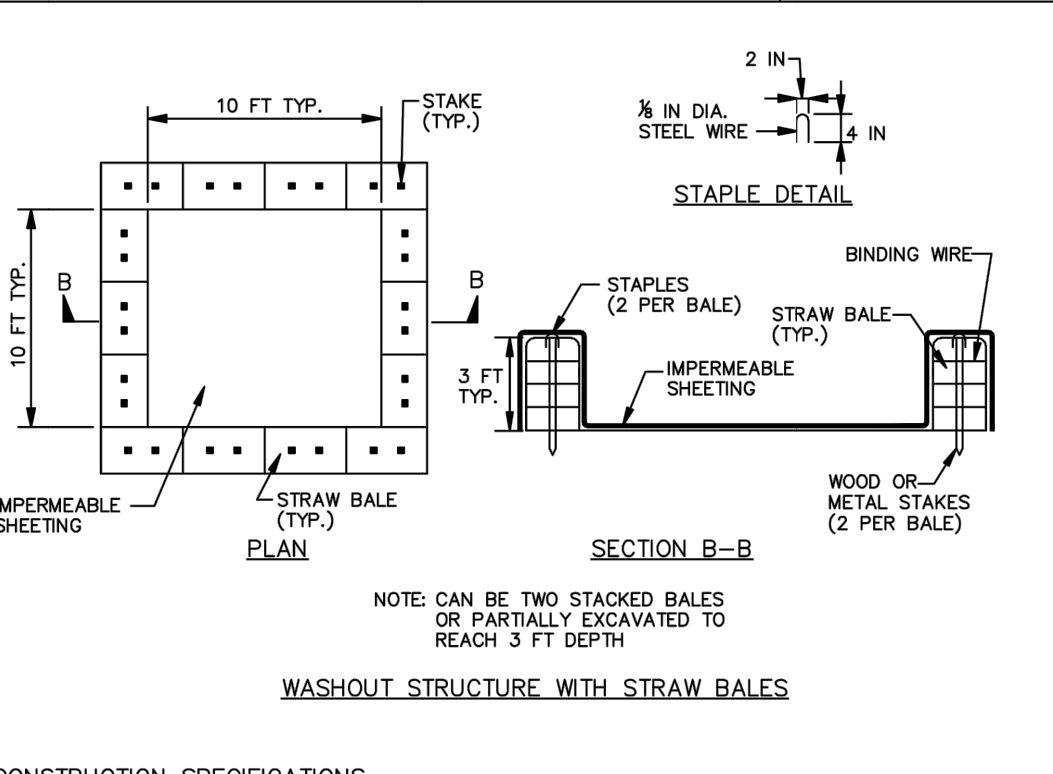
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U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



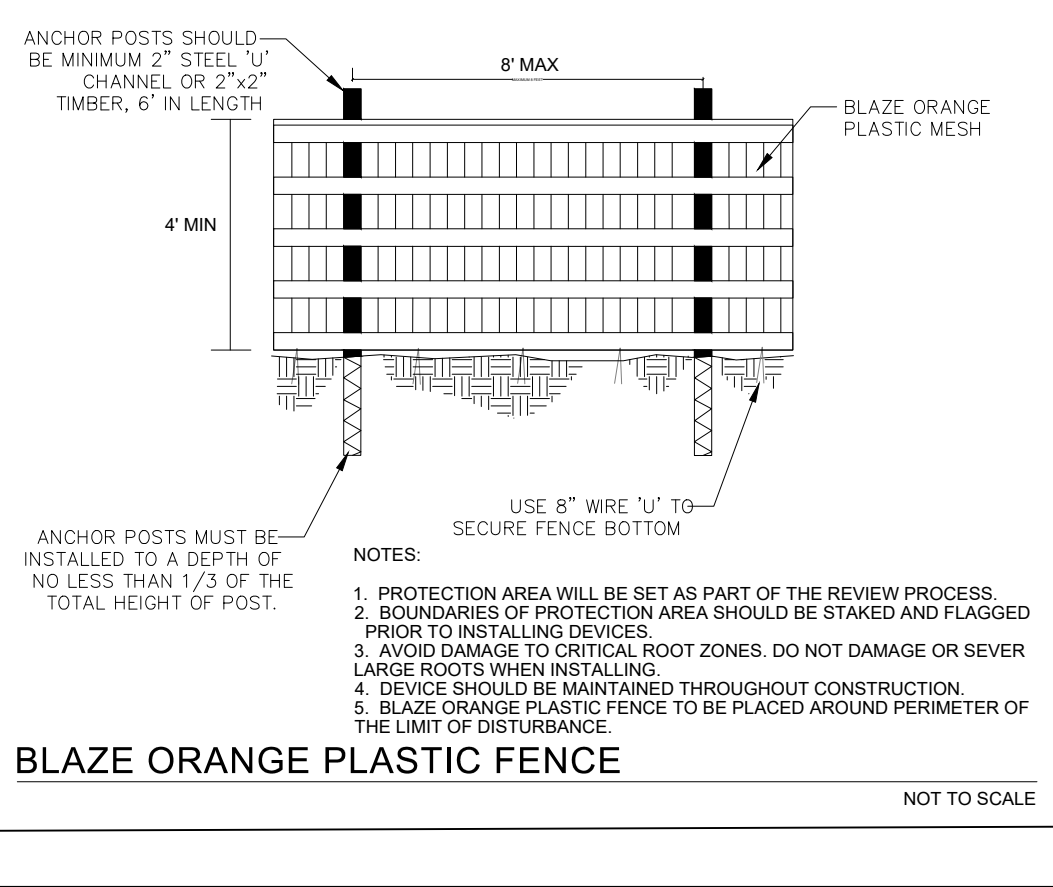
TEMPORARY MULCH FOR ACCESS DETAIL  
NOT TO SCALE



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



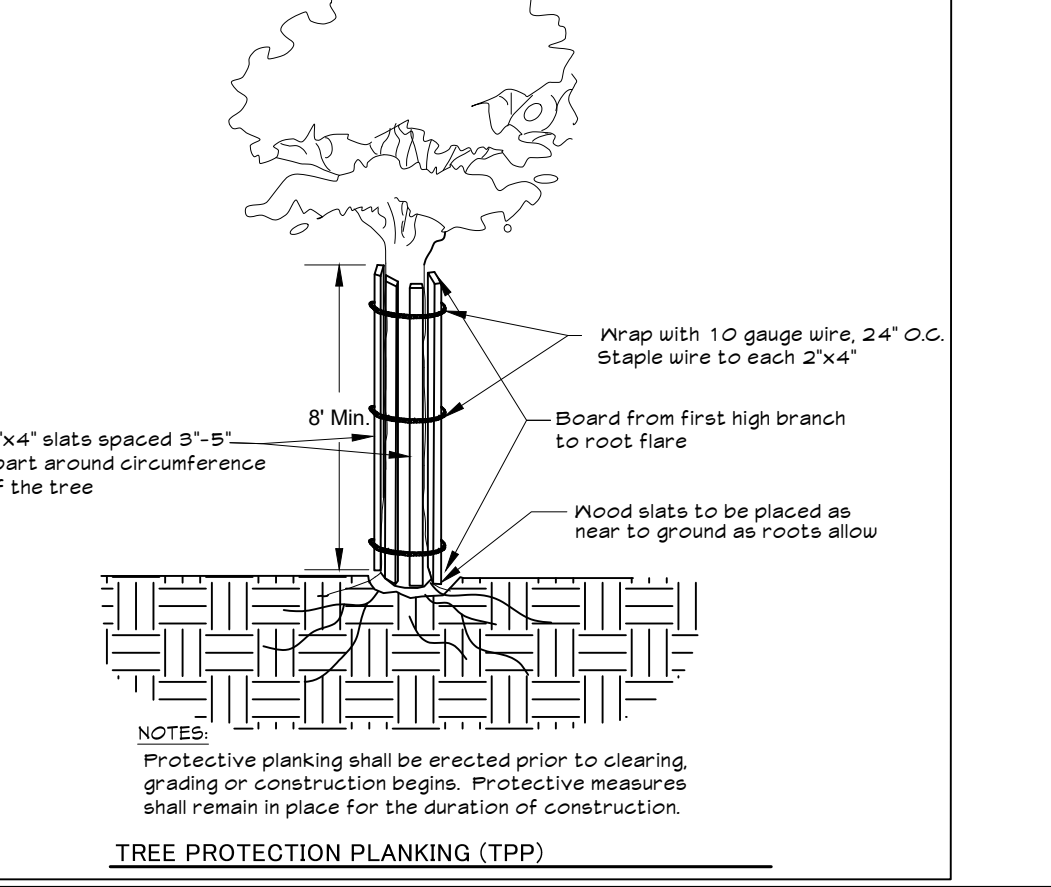
BLAZE ORANGE PLASTIC FENCE  
NOT TO SCALE



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



TREE PROTECTION PLANKING (TPP)  
NOT TO SCALE

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

CENTURY  
ENGINEERING

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
  
GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE:  
LAKELANDS E&S CONTROL  
DETAILS

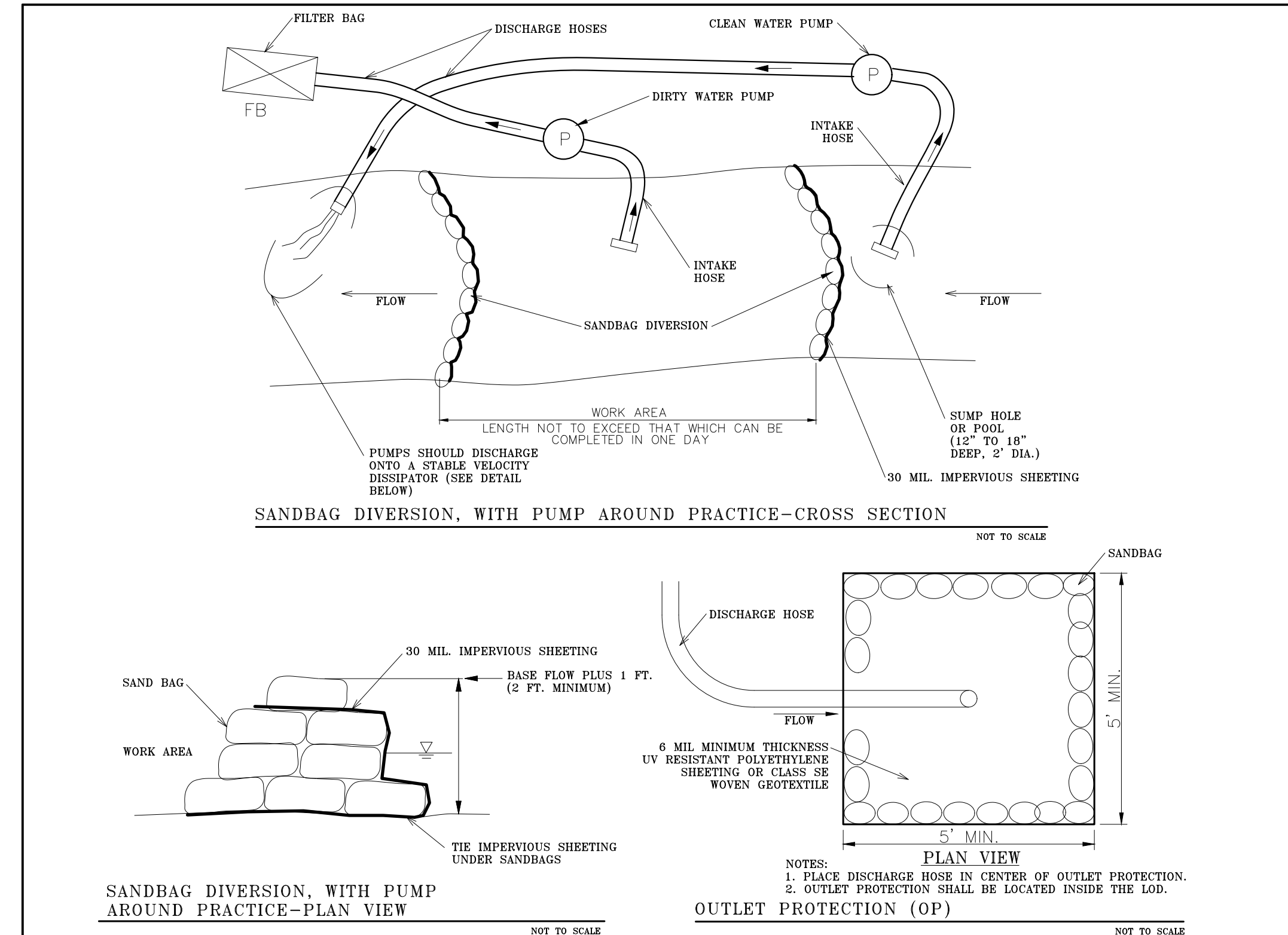
SEAL:  
  
PROJECT NO: 151078.02  
SCALE: N.T.S. DATE: 10/25/2017  
DESIGN: AB/SH CHECK: CL  
DWG NO: SC-14 OF 15  
SHEET NO: 39 OF 45

CITY OF GAITHERSBURG  
DEPARTMENT OF PUBLIC WORKS  
FINAL PLAN APPROVAL  
SEDIMENT & EROSION CONTROL

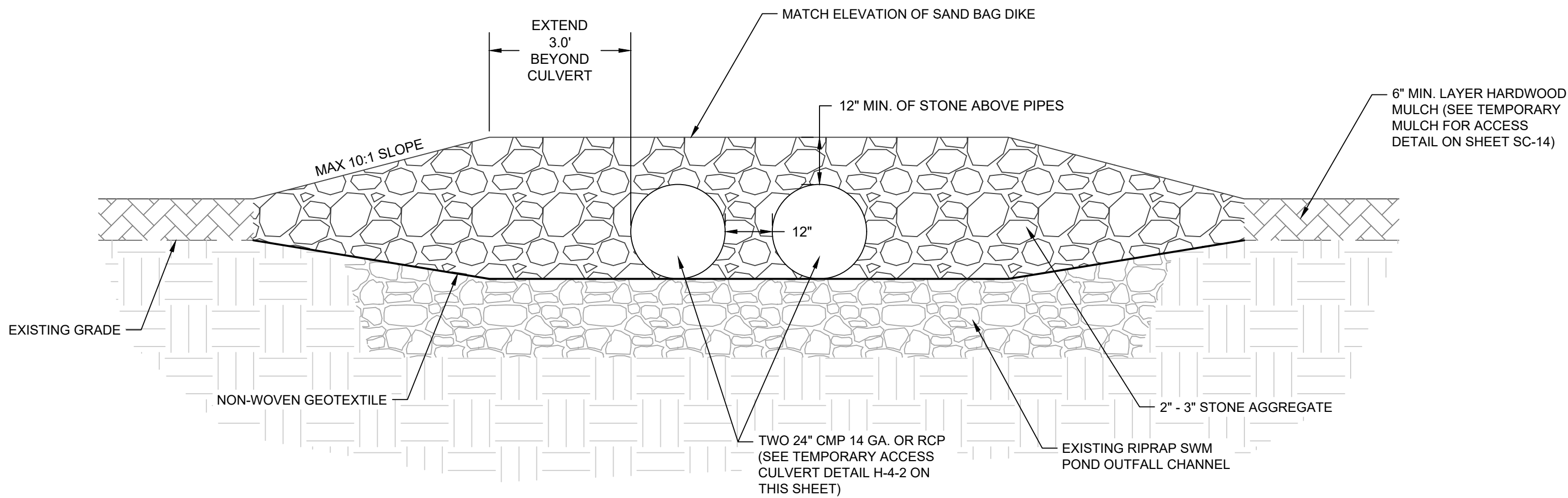
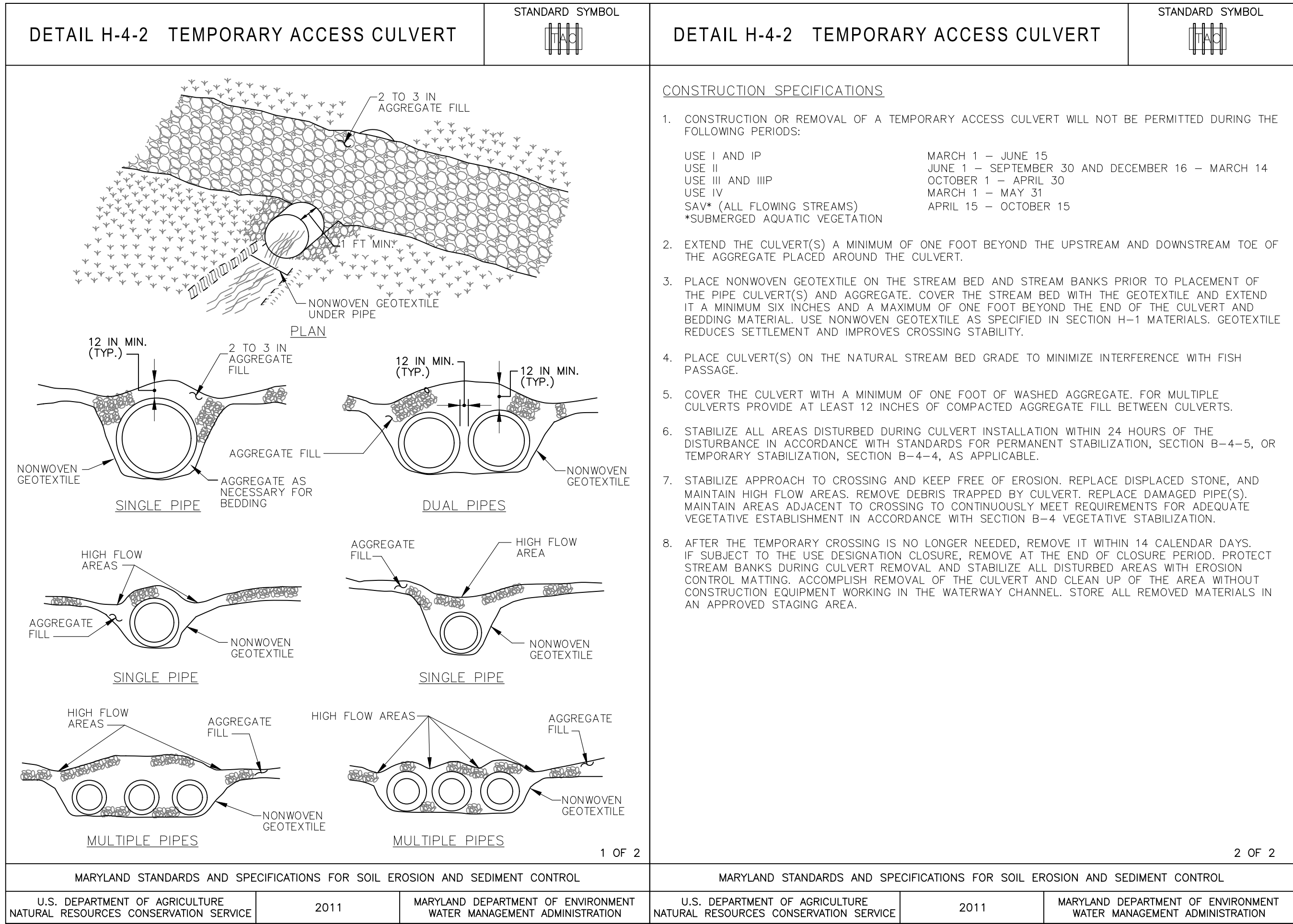
APPLICATION NO. SEC-7669-2017  
APPROVAL DATE February 1, 2018  
BY Meredith Strawn  
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN



T:\2015\Transportation\151078.02 Great Seneca Hwy. SWM & Stream Rest\CAD\Lakelands\SES-0001\_Lakelands.dwg Oct 25, 2017 12:34pm



- MWC 1.2: PUMP-AROUND PRACTICE
- DESCRIPTION THE WORK SHALL CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND INSTREAM CONSTRUCTION SITES.
- IMPLEMENTATION SEQUENCE SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES, AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL 1.2):
1. CONSTRUCTION ACTIVITIES INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BEGIN UNTIL ALL NECESSARY EASEMENTS AND/OR RIGHT-OF-WAYS HAVE BEEN ACQUIRED. ALL EXISTING UTILITIES SHALL BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY RESULT FROM CONSTRUCTION AND SHALL REPAIR THE DAMAGE AT HIS/HER OWN EXPENSE TO THE COUNTY'S OR UTILITY COMPANY'S SATISFACTION.
  2. THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT OR WMA SEDIMENT CONTROL INSPECTOR AT LEAST 5 DAYS BEFORE BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHALL INFORM THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION AND THE PROVIDER OF LOCAL UTILITIES A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION.
  3. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ON SITE WITH THE WMA SEDIMENT CONTROL INSPECTOR, THE CITY PROJECT MANAGER, AND THE ENGINEER TO REVIEW LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL STAKE OUT ALL LIMITS OF DISTURBANCE PRIOR TO THE PRE-CONSTRUCTION MEETING SO THEY MAY BE REVIEWED. THE PARTICIPANTS WILL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREAS AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS. TREES SHALL NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM THE WMA OR LOCAL AUTHORITY.
  4. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.
  5. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHALL BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. IN SOME CASES, WORK MAY BEGIN DOWNSTREAM IF APPROPRIATE. THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. THE CONTRACTOR SHALL ONLY BEGIN WORK IN AN AREA WHICH CAN BE COMPLETED BY THE END OF THE DAY INCLUDING GRADING ADJACENT TO THE CHANNEL. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
  6. SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS. TEMPORARY MEASURE FOR DEWATERING IN-CHANNEL CONSTRUCTION SITES.
  7. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A DEWATERING BASIN, SEDIMENT BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
  8. TRAVERSING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED, SHALL BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHALL BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHALL BE USED ONLY WHEN NECESSARY AND SHALL BE USED ONLY WHERE NOTED ON THE PLANS OR SPECIFIED. (SEE SECTION 4, STREAM CROSSINGS, MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION).
  9. ALL STREAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS-SECTIONS. ALL GRADING MUST BE STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATING AS SPECIFIED ON THE PLANS.
  10. AFTER AN AREA IS COMPLETED AND STABILIZED, THE CLEAN WATER DIKE SHALL BE REMOVED. AFTER THE FIRST SEDIMENT FLUSH, A NEW CLEAN WATER DIKE SHALL BE ESTABLISHED UPSTREAM FROM THE OLD SEDIMENT DIKE. FINALLY, UPON ESTABLISHMENT OF A NEW SEDIMENT DIKE BELOW THE OLD ONE, THE OLD SEDIMENT DIKE SHALL BE REMOVED.
  11. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHALL BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHALL DISCHARGE ONTO THE SAME VELOCITY DISSIPATOR USED FOR THE MAIN STEM PUMP AROUND.
  12. IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHALL TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND PRACTICES, SHALL FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WHEN CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHALL RESUME. WATER FROM THE TRIBUTARY SHALL CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.
  13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.
  14. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.
  15. IF, IN THE JUDGMENT OF THE ENGINEER, INADEQUATE ENERGY DISSIPATION OR CHANNEL BED EROSION IS OCCURRING, THE CONTRACTOR SHALL BE REQUIRED TO INCREASE THE MATERIAL OR PLACEMENT SIZE OF THE OUTFALL PROTECTION AT THE DIRECTION OF THE ENGINEER.
  16. THE CONDITION OF THE OUTFALL PROTECTION SANDBAGS IS TO BE CHECKED TWICE PER DAY (START OF WORK DAY AND MID-DAY) TO ENSURE THAT SAND IS NOT ESCAPING BAGS. DAMAGED OR LEAKING BAGS ARE TO BE REMOVED AND REPLACED.
  17. OUTFALL PROTECTION MATERIALS AND GEOTEXTILE SHALL BE REMOVED FROM THE CHANNEL AT THE COMPLETION OF EACH CONSTRUCTION STAGE.



**SWM POND OUTFALL TEMPORARY CROSSING - SECTION VIEW**

- NOTES:
1. THE CONTRACTOR SHALL USE TWO 24" CORRUGATED METAL PIPES (CMP 14 GA.) OR TWO REINFORCED CONCRETE PIPES (RCP).
  2. THE MINIMUM LENGTH OF EACH PIPE SHALL BE 16'. THE MAXIMUM LENGTH OF EACH PIPE SHALL BE 20'.
  3. THE TEMPORARY ACCESS CULVERTS SHALL BE PLACED PARALLEL TO THE STREAM CHANNEL.
  4. ANY DAMAGE TO STREAM CROSSING DURING BASEFLOW OR FLOOD EVENTS SHALL BE PROMPTLY REPAIRED
  5. INSPECT TEMPORARY STREAM CROSSING AND SANDBAG DIVERSION EACH DAY AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF STRUCTURES SHALL BE PROACTIVE, NOT REACTIVE. THE STREAM CROSSING AND SANDBAGS SHALL BE INSPECTED WITHIN 24 HOURS OF RAIN EVENTS AND, IF NECESSARY, PERFORM MAINTENANCE IMMEDIATELY.
  6. THE TEMPORARY CROSSING, INCLUDING THE TEMPORARY ACCESS CULVERTS, SHALL BE INCIDENTAL TO THE COST FOR MAINTENANCE OF STREAMFLOW.

<b>CITY OF GAITHERSBURG</b> <b>DEPARTMENT OF PUBLIC WORKS</b> <b>FINAL PLAN APPROVAL</b>	
SEDIMENT & EROSION CONTROL	
APPLICATION NO. SEC-7669-2017	
APPROVAL DATE January 16, 2018	
BY Meredith Strider	
PLAN APPROVAL EXPIRES AT THE TIME OF ASSOCIATED SITE PLAN	

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MR. WILLIAM ROBINSON, P.E.  
TEL: 240.805.1317

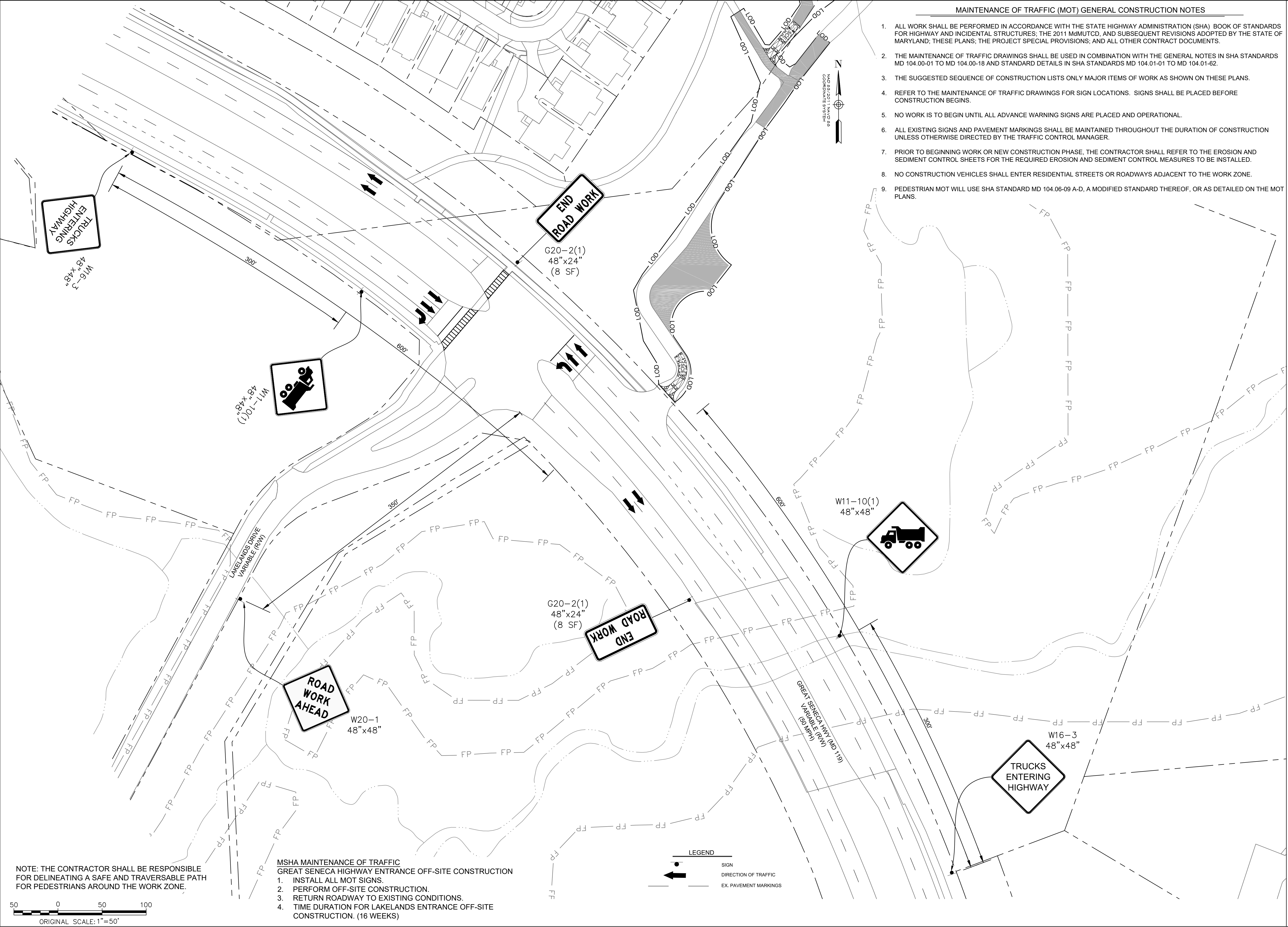
LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

**CENTURY**  
**ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:	
GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT	
SHEET TITLE:	
LAKELANDS E&S CONTROL DETAILS	
SEAL:	PROJECT NO. 151078.02
SCALE: N.T.S.	DATE: 10/25/2017
DESIGN: AB/SH	CHECK: CL
DWG NO:	SC-15 OF 15
SHEET NO:	40 OF 45





MAINTENANCE OF TRAFFIC (MOT) GENERAL CONSTRUCTION NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION (SHA) BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES; THE 2011 MdMUTCD, AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND; THESE PLANS; THE PROJECT SPECIAL PROVISIONS; AND ALL OTHER CONTRACT DOCUMENTS.
- THE MAINTENANCE OF TRAFFIC DRAWINGS SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES IN SHA STANDARDS MD 104.00-01 TO MD 104.00-18 AND STANDARD DETAILS IN SHA STANDARDS MD 104.01-01 TO MD 104.01-62.
- THE SUGGESTED SEQUENCE OF CONSTRUCTION LISTS ONLY MAJOR ITEMS OF WORK AS SHOWN ON THESE PLANS.
- REFER TO THE MAINTENANCE OF TRAFFIC DRAWINGS FOR SIGN LOCATIONS. SIGNS SHALL BE PLACED BEFORE CONSTRUCTION BEGINS.
- NO WORK IS TO BEGIN UNTIL ALL ADVANCE WARNING SIGNS ARE PLACED AND OPERATIONAL.
- ALL EXISTING SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE TRAFFIC CONTROL MANAGER.
- PRIOR TO BEGINNING WORK OR NEW CONSTRUCTION PHASE, THE CONTRACTOR SHALL REFER TO THE EROSION AND SEDIMENT CONTROL SHEETS FOR THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED.
- NO CONSTRUCTION VEHICLES SHALL ENTER RESIDENTIAL STREETS OR ROADWAYS ADJACENT TO THE WORK ZONE.
- PEDESTRIAN MOT WILL USE SHA STANDARD MD 104.06-09 A-D, A MODIFIED STANDARD THEREOF, OR AS DETAILED ON THE MOT PLANS.

CLIENT:  
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LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

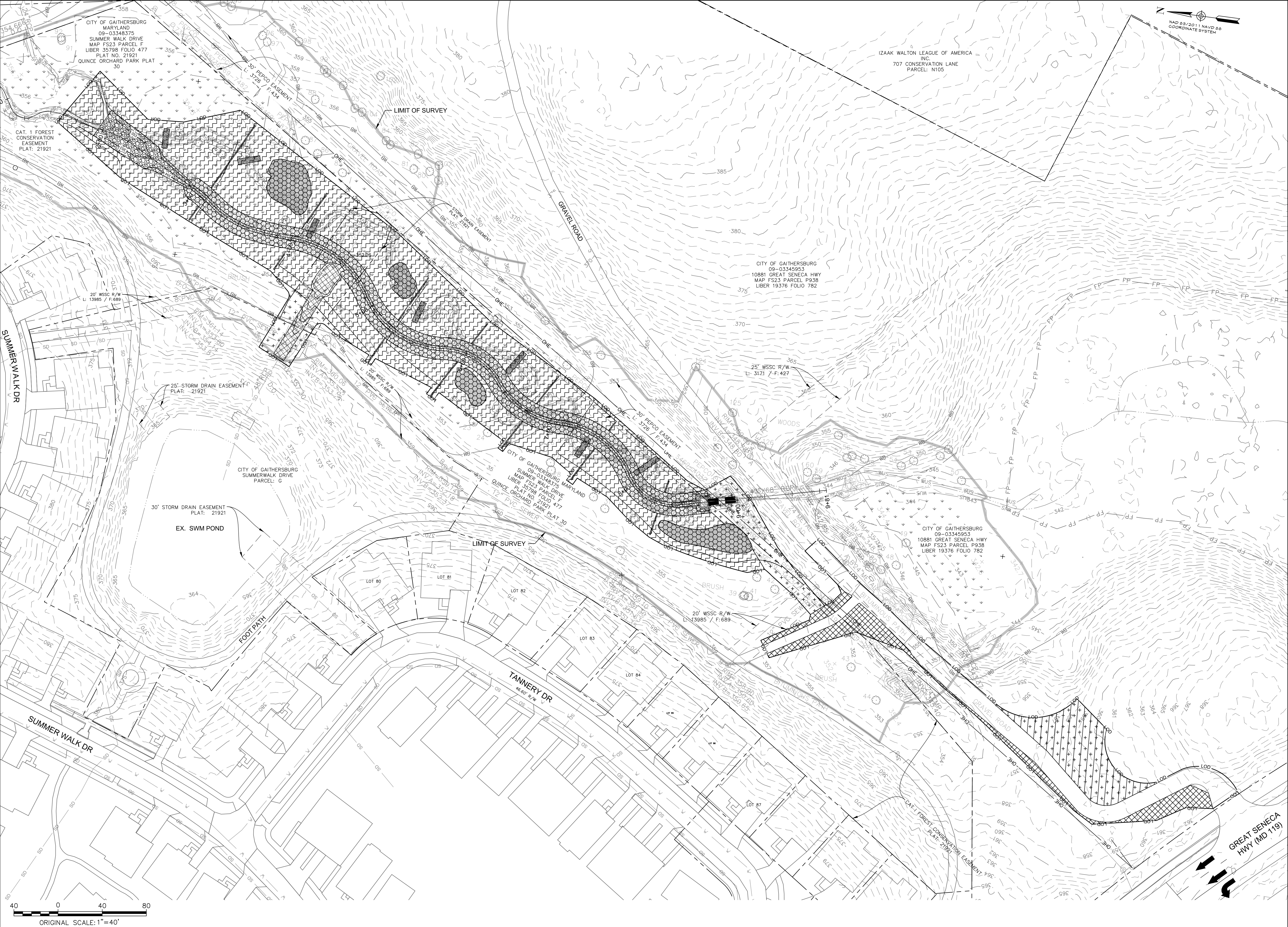
**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS MAINTENANCE  
OF TRAFFIC PLAN**

SEAL	PROJECT NO:	151078.02
	SCALE:	1" = 50'
	DATE:	10/25/2017
	DESIGN:	AB/SH
DWG NO:	CHECK:	CL
	MOT-02 OF 02	
	SHEET NO:	
	41 OF 45	





CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
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GAITHERSBURG, MARYLAND 20878

REVISIONS		
NO.	DATE	DESCRIPTION

- ZONE 1 - FORESTED SCRUB SHRUB WETLAND & WETLAND SEED MIX  
0.91 AC / 39,476 SF
- ZONE 2 - EMERGENT WETLAND PLUGS & WETLAND SEED MIX  
0.31 AC / 13,659 SF
- ZONE 3 - RIPARIAN BUFFER TREE / SHRUB PLANTINGS  
0.11 AC / 4,854 SF
- ZONE 4 - RIPARIAN SEED MIX  
0.11 AC / 4,625 SF
- ZONE 5 - TURFGRASS SEED MIX  
0.10 AC / 4,182 SF

**CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
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PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:  
**GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT**

SHEET TITLE:  
**LAKELANDS LANDSCAPE  
PLAN**

SEAL	PROJECT NO.: 151078.02	
	SCALE: 1" = 40'	DATE: 10/25/2017
	DESIGN: AB/SH	CHECK: CL
	DWG NO:	
LP-02 of 02		
SHEET NO: 42 of 45		



Tree/Forest Landscaping Notes:

General Notes -

1. Unless otherwise stipulated by specific requirements of this manual, the landscaping shown on this plan must be planted in accordance with the latest edition of the landscape specification guidelines, developed by the MD-DC-VA chapter of the Landscape Contractors Association.
2. Any plantings within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be done to avoid any adverse impact on the roots of existing trees.
3. All plant material will be reinspected for survival by the Planning and Code Administration one year following installation. a 10 percent maintenance bond will be retained during this time period.
4. Soil conditions must be tested, verified, and adjusted by the landscape contractor to insure that appropriate soils composition and pH levels are suitable for plant materials specified for that specific location.

Plant Material Selection -

1. The contractor shall furnish plant materials in sizes and quantities specified in the plant schedules.
2. Nursery grown plant material should meet or exceed the requirements of the American Nursery & Landscape Association's (A.N.L.A.) latest edition of "American Standard Nursery Stock" (ANSI Z60.1) Specifications, particularly regarding the size, growth, size of the root ball, and density of branch structure.
3. All planting material shall be sourced from within 100 miles of the site.
4. No substitutions shall be made without the written consent of the Owner and/or Landscape Architect.
5. The Landscape Architect or Owner shall have the right, at any stage of the operations, to reject any and all work and materials which, in his or her opinion, does not meet the requirements of these plans and specifications. All rejected material shall be removed from the site by the Contractor.

Plant Material Transport, Approval, & Storage -

1. Plant material shall be protected to prevent sun scald, desiccation, and structural damage during transport to the site. Root stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
2. Plant material shall be inspected to be free of disease, damage, insect infestation, and vigor upon delivery to the site. All plants should be healthy and well structured. No heeled-cold storage or collected stock will be accepted. Plants in poor condition shall be rejected, removed from the site and replaced with acceptable materials.
3. Plant material shall be stored in a cool, shaded area on the site and kept moist to prevent desiccation until ready for planting. Planting shall begin within 24 hours of plant delivery to the site. Plant material that remains unplanted beyond 24 hours shall be protected from direct sun, and weather and kept moist. Plant materials shall not be left unplanted for more than 2 weeks.
4. The contractor is required to obtain clean fresh water for use during planting operations and the subsequent maintenance period.

Site Preparation and Planting -

1. The site and areas immediately abutting (within 25' of) the LOD shall be treated for invasive species prior to the start of construction.
2. No clearing or grading shall begin before stress-reduction measures have been implemented. Such measures may include root pruning, crown reduction or pruning, etc as specified on sheet 38 of 61 or by the plan preparer or an MDLTE/ISA certified arborist. See Forest Conservation Plan sheet for more information.
3. Prior to beginning any construction activities, tree protection fencing shall be installed along all sections of the LOD abutting wooded/forested areas and around all 'tree save' areas to ensure preservation of these areas. See E&S plan sheets or the Forest Conservation Plan sheet for more information.
4. All tree protection measures must be in place at the time of the Sediment & Erosion Control inspection, prior to the commencement of demolition, site clearing, grading, or construction. Tree protection devices shall be maintained for the duration of construction. No equipment, trucks, materials, or debris may be stored within the tree protection areas during the

LAKELANDS TREE INVENTORY  
(12" DBH OR GREATER)

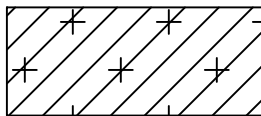
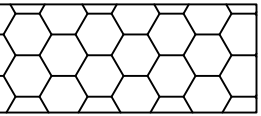
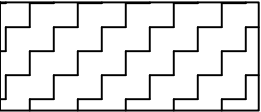
Tree No.	Species	Condition	DBH (in)
T-1	Black Cherry ( <i>Prunus serotina</i> )	Fair	12.3
T-2	Black Cherry ( <i>Prunus serotina</i> )	Good	12.4
T-3	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	12.7
T-4	Black Cherry ( <i>Prunus serotina</i> )	Good	15.6
T-5	Black Willow ( <i>Salix nigra</i> )	Fair	12.6
T-6	Black Willow ( <i>Salix nigra</i> )	Fair	17
T-7	Tulip tree ( <i>Liriodendron tulipifera</i> )	Good	12.1
T-8*	Black Walnut ( <i>Juglans nigra</i> )	Good	13.5
T-9	Black Willow ( <i>Salix nigra</i> )	Poor	15.5
T-10	Black Willow ( <i>Salix nigra</i> )	Poor	13.4
T-11	Black Willow ( <i>Salix nigra</i> )	Poor	16.7
T-12*	Black Willow ( <i>Salix nigra</i> )	Good	13.9
T-13*	Black Willow ( <i>Salix nigra</i> )	Good	14.4
T-14*	Black Willow ( <i>Salix nigra</i> )	Dead	12
T-15*	Black Willow ( <i>Salix nigra</i> )	Good	14.5
T-16	Red Maple ( <i>Acer rubrum</i> )	Good	17
T-17*	Red Mulberry ( <i>Morus rubra</i> )	Fair	12.4
T-18	Black Willow ( <i>Salix nigra</i> )	Fair	16.5
T-19	Black Willow ( <i>Salix nigra</i> )	Good	14.6
T-20*	Red Maple ( <i>Acer rubrum</i> )	Good	14
T-21*	Black Walnut ( <i>Juglans nigra</i> )	Fair	12.4
T-22*	Black Willow ( <i>Salix nigra</i> )	Fair	21.2
T-23	Boxelder ( <i>Acer negundo</i> )	Good	15
T-24	Boxelder ( <i>Acer negundo</i> )	Fair	12
T-25*	Boxelder ( <i>Acer negundo</i> )	Fair	15.8
T-26*	Boxelder ( <i>Acer negundo</i> )	Good	15.5
T-27	Boxelder ( <i>Acer negundo</i> )	Good	13
T-28	Boxelder ( <i>Acer negundo</i> )	Good	15.7
T-29*	Boxelder ( <i>Acer negundo</i> )	Good	13.3
T-30	Boxelder ( <i>Acer negundo</i> )	Good	18.63
T-31	Boxelder ( <i>Acer negundo</i> )	Good	13.1
T-32	Boxelder ( <i>Acer negundo</i> )	Good	24.2
T-33	Red Maple ( <i>Acer rubrum</i> )	Good	13.7
T-34*	Boxelder ( <i>Acer negundo</i> )	Good	18.3
T-35*	Boxelder ( <i>Acer negundo</i> )	Good	17.9
T-36*	Boxelder ( <i>Acer negundo</i> )	Good	12.8
T-37*	Boxelder ( <i>Acer negundo</i> )	Good	13.5
T-38	Boxelder ( <i>Acer negundo</i> )	Good	18.6
T-39	Boxelder ( <i>Acer negundo</i> )	Good	13.8
T-40	Boxelder ( <i>Acer negundo</i> )	Good	25.2
T-41	Boxelder ( <i>Acer negundo</i> )	Good	18
T-42	Boxelder ( <i>Acer negundo</i> )	Good	18.1

entire construction project.

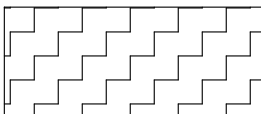
5. All trees to be removed must be removed in a manner that will not damage the remaining trees. The Contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable, soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
6. Any trees that are to remain that are damaged during the clearing operation must be repaired or removed and replaced in an approved manner by an MDLTE/ISA certified arborist or city representative as soon as final clearing has been completed.
7. Root pruning may be necessary where the critical root zone is impacted, as determined by the plan preparer or an MDLTE/ISA certified arborist. Pruning shall be along the LOD adjacent to tree protection fencing. A certified arborist shall supervise or conduct root pruning.
8. Refer to the MDSHA Standards and Specifications Section 710.03.01 Planting Seasons Table for acceptable planting period. Planting shall not be completed in sub-freezing temperatures; when the ground is frozen; when weather conditions will adversely affect plant materials; or when the soil is too wet or otherwise in a condition not acceptable for planting.
9. Mow planting area close to the ground one week (or less) prior to container planting date.
10. The Contractor is responsible for testing project soils. The Contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to fertilizers, lime, and topsoil. Proper planting soils must be verified prior to when planting materials are installed.
11. Prepare planting pits per details as shown MDSHA Standards and Specifications Section 710.03.04.
12. All trees are to be located and minimum distance of 5 feet from all utility boxes, 5 feet from a storm drain inlet or man-hole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign, and at least 30 feet away from any intersection.
13. Install plant materials per MDSHA Standards and Specifications 710.03.09.
14. Upon completion of all landscaping, an acceptance of the work shall be held. The contractor shall notify the Landscape Architect of the Owner for scheduling of the inspection at least seven (7) days prior to the anticipated inspection date.
15. After installation of plants, the contractor shall monitor the soil moisture and water needs of plants and seed as necessary to ensure survivability. Watering planting pits and seeded areas should occur as specified in MDSHA Standards and Specifications Section 710.03.04(c).
16. A biodegradable tree shelter is to be installed as shown in the Biodegradable Tree Shelter detail around every planted deciduous tree.

Maintenance -

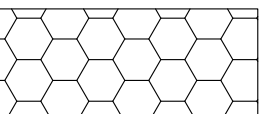
1. Upon completion of installation, the planting area is to be maintained for a 2 year period. An 85% survival rate must be achieved from the date of acceptance to the termination of the maintenance period. Maintenance shall be as follows:
- a. Any plant material showing signs of distress are to be replaced immediately by the contractor.
- b. Native volunteer seedlings shall be removed only if they are adversely impacting the growth of the planted material. Non-native and invasive species are to be treated within the entire planting area through selected and approved means.
- c. All man-made materials shall be removed from the site which would impact the establishment of the planted materials.
- d. Thoroughly water planted material once weekly or as needed during the growing season.
- e. Planted material is to be monitored for signs of damage and appropriate actions shall be taken to prevent further damage. This may include, but not be limited to, the following: pest damage or infestation, disease or browsing; any dead or decimated material shall be replaced with the identical species or an approved replacement.
- f. At the end of the 2 year maintenance period, the site shall be inspected for the 85% survival rate as required by the City of Gaithersburg



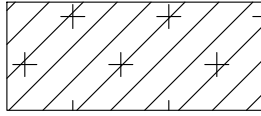
Zone 1 - 0.91 AC / 39,476 SF



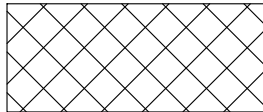
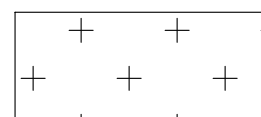
Zone 2 - 0.31 AC / 13,659 SF



Zone 3 - 0.11 AC / 4,854 SF



Zone 4 - 0.11 AC / 4,625 SF



LAKELANDS PLANTING SCHEDULES

Zone 1: Forested Scrub Shrub Wetland (Total Area =0.91 AC / 39,476 SF)

Botanical Name	Common Name	Category	Size	Form	Spacing	Indicator	Quantity
<i>Platanus occidentalis</i>	American Sycamore	LST	0.75" - 1" Cal.	#10 Cont.	30'-40' O.C.	FACW	13
<i>Betula nigra</i>	River Birch	LST	0.75" - 1" Cal.	#10 Cont.	30'-40' O.C.	FACW	6
<i>Populus heterophylla</i>	Swamp Cottonwood	LST	0.75" - 1" Cal.	#10 Cont.	30'-40' O.C.	OBL	6
<i>Viburnum dentatum</i>	Arrowwood	Shrub	3' Height	#2 Cont.	10'-12' O.C.	FAC	16
<i>Ilex glabra</i>	Inkberry	Shrub	3' Height	#2 Cont.	10'-12' O.C.	FACW	16
<i>Lindera benzoin</i>	Spicebush	Shrub	3' Height	#2 Cont.	10'-12' O.C.	FACW	16
<i>Ilex verticillata</i>	Winterberry Holly	Shrub	3' Height	#2 Cont.	10'-12' O.C.	FACW	16
LST= Large Shade Tree, MST=Medium Shade Tree							Total QTY 89

Zone 2: Emergent Wetland Plugs (Total Area = 0.25 AC/ 11,091)

Botanical Name	Common Name	Category	Size	Form	Spacing	Indicator	Quantity
<i>Symplocarpus foetidus</i>	Skunk Cabbage	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	308
<i>Persicaria hydropiperoides</i>	Swamp smartweed	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	308
<i>Impatiens capensis</i>	Jewelweed	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	308
<i>Osmunda regalis</i>	Royal Fern	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	308
<i>Osmunda cinnamomea</i>	Cinnamon Fern	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	308
<i>Juncus effusus</i>	Soft Rush	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	308
<i>Carex lurida</i>	Shallow Sedge	Perennial Plug	2" Plug	Plug	2' O.C.	OBL	308
<i>Scirpus cyperinus</i>	Yellow Nutsedge	Perennial Plug	2" Plug	Plug	2' O.C.	FACW	308
<i>Panicum virgatum</i>	Switchgrass	Perennial Plug	2" Plug	Plug	2' O.C.	FAC	308
							Total QTY 2,772

Zone 3: Riparian Buffer Tree/Shrub Plantings (Total Area = 0.11 AC / 4,854 SF)

Botanical Name	Common Name	Strata	Size	Form	Spacing	Indicator	Quantity
<i>Platanus occidentalis</i>	American Sycamore	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACW	4
<i>Quercus rubra</i>	Northern Red Oak	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	4
<i>Carya glabra</i>	Pignut Hickory	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	4
<i>Quercus alba</i>	White Oak	LST	2.5" Cal.	#10 Cont.	14'-16' O.C.	FACU	3
<i>Cercis canadensis</i>	Eastern Redbud	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	UPL	2
<i>Sassafras albidum</i>	Sassafras	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	FACU	2
<i>Ilex opaca</i>	American Holly	MST	5'-7' Height	#10 Cont.	12'-14' O.C.	FAC	2
<i>Hamamelis virginiana</i>	American witch hazel	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	5
<i>Lindera benzoin</i>	Spicebush	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACW	5
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	5
<i>Kalmia latifolia</i>	Mountain Laurel	Shrub	2'-3' Height	#2 Cont.	6'-8' O.C.	FACU	5
LST= Large Shade Tree, MST=Medium Shade Tree							Total QTY 41

Wetland Seed Mix (1.22 AC / 53,135 SF)

Botanical Name	Common Name	Application Rate (lbs/ac)	% Seed Mix	Indicator	Zone 1 Quantity (lbs)	Zone 2 Quantity (lbs)
<i>Carex vulpinoidea</i>	Fox Sedge	8	20	OBL	7.28	6.20
<i>Elymus virginicus</i>	Virginia Wild Rye	12	30	FACW	10.92	9.30
<i>Panicum virgatum</i>	Switchgrass	4	10	FAC	3.64	3.10
<i>Cinna arundinacea</i>	Wood reedgrass	2.8	7	FACW	2.55	2.17
<i>Carex lurida</i>	Lurid Sedge	2.4	6	OBL	2.18	1.86
<i>Carex scoparia</i>	Blunt Broom Sedge	2.4	6	FACW	2.18	1.86
<i>Scirpus atrovirens</i>	Green Bulrush	2	5	OBL	1.82	1.55
<i>Verbena hastata</i>	Swamp Verbena	2	5	FACW	1.82	1.55
<i>Juncus effusus</i>	Soft rush	1.2	3	FACW	1.09	0.93
<i>Onoclea sensibilis</i>	Sensitive Fern	0.8	2	FACW	0.73	0.62
<i>Scirpus pungens</i>	Common Three-Square	0.8	2	OBL	0.73	0.62
<i>Eupatorium fistulosum</i>	Joe Pye Weed	0.8	2	FACW	0.73	0.62
<i>Lobelia cardinalis</i>	Cardinal Flower	0.8	2	FACW	0.73	0.62
Seed Total (lbs):					36.40	31.00

Total Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass (*Lolium perenne*) and 60 lbs/ac of Hard Fescue (*Festuca trachyphylla*) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet (*Setaria italica*) if during May 16 to July 31.

Riparian Seed Mix (Total Area = 0.22 AC / 9,479 SF)

Botanical Name	Common Name	Application Rate (lbs/ac)	% Seed Mix	Zone 3 Quantity (lbs)	Zone 4 Quantity (lbs)
<i>Elymus virginicus</i>	Virginia Wild Rye	10	25	1.10	1.10
<i>Elymus riparius</i>	Riverbank Wildrye	8	20	0.88	0.88
<i>Andropogon gerardii</i>	Big Bluestem	8	20	0.88	0.88
<i>Carex lurida</i>	Shallow Sedge	4	10	0.44	0.44
<i>Panicum virgatum</i>	Switchgrass	3.6	9	0.40	0.40
<i>Juncus effusus</i>	Soft Rush	1.6	3	0.18	0.18
<i>Vernonia noveboracensis</i>	New York Ironweed	1.2	2	0.13	0.13
<i>Eupatorium perfoliatum</i>	Common Boneset	0.8	2	0.09	0.09
<i>Helioopsis helianthoides</i>	Oxeye Sunflower	0.8	2	0.09	0.09
<i>Verbena hastata</i>	Blue Vervain	0.8	2	0.09	0.09
<i>Eupatorium fistulosum</i>	Joe Pye Weed	0.8	2	0.09	0.09
<i>Lobelia siphilitica</i>	Blue Lobelia	0.4	1	0.04	0.04

Total Application Rate of 40 lbs/ac. To be applied with 15 lbs/ac of Perennial Ryegrass (*Lolium perenne*) and 60 lbs/ac of Hard Fescue (*Festuca trachyphylla*) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet (*Setaria italica*) during May 16 to July 31.

Zone 5: Turfgrass Seed Mix (Total Area = 0.10 AC / 4,182 SF)

Botanical Name	Qty (lbs)
SHA Turfgrass Seed Mix 920.06.07 (a)	20

Total Application Rate of 200 lbs/ac

CLIENT:  
CITY OF GAITHERSBURG DPW  
800 RABBIT ROAD  
GAITHERSBURG, MARYLAND 20878  
CONTACT: MS. BECKY UEBELE  
TEL: 301.258.6370

LAND OWNER:  
CITY OF GAITHERSBURG  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20878

REVISIONS

NO.	DATE	DESCRIPTION

CENTURY  
ENGINEERING

CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE: (443) 589-2400 FAX: (443) 589-2401

PROJECT NAME:

GREAT SENECA  
HIGHWAY STREAM  
RESTORATION PROJECT

SHEET TITLE:

LAKELANDS LANDSCAPE  
NOTES

SEAL:

PROJECT NO.: 151078.02  
SCALE: N.T.S. DATE: 1/31/2018  
DESIGN: AB/SH CHECK: TT  
DWG NO:

LN-02 of 02

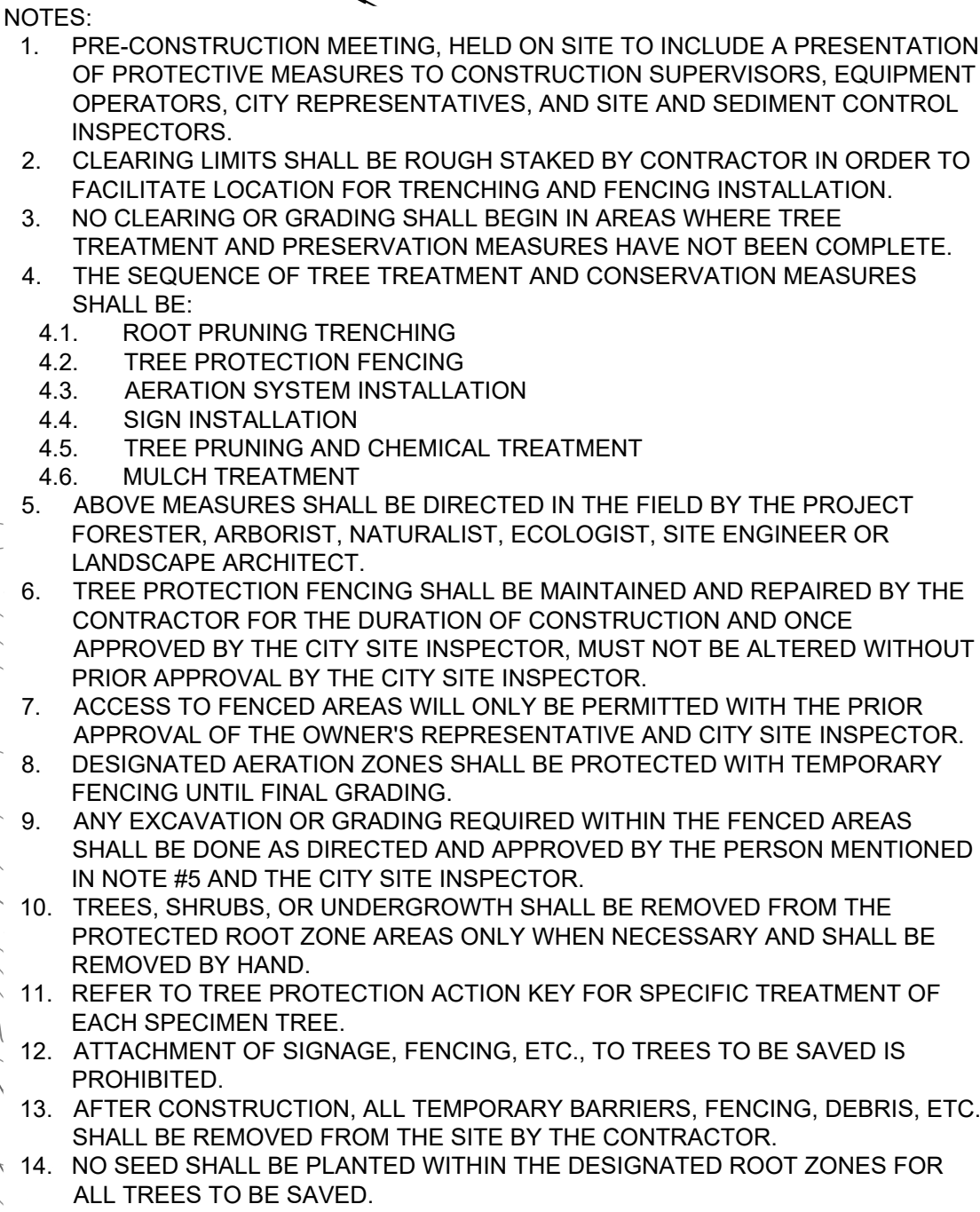
SHEET NO:

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FOREST CONSERVATION NOTES:

- NO SPECIMEN TREES (TREES  $\geq 30"$  DBH) WILL BE REMOVED.
- NO FOREST STAND CLEARING IS PROPOSED. 18 INDIVIDUAL TREES ARE PROPOSED FOR REMOVAL.
- THE MAJORITY OF THE PROJECT AREA IS WITHIN AN EXISTING CATEGORY 1 FOREST CONSERVATION EASEMENT (PLAT: 21921).

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CLIENT: CITY OF GAITHERSBURG DPW 800 RABBIT ROAD GAITHERSBURG, MARYLAND 20878 CONTACT: MS. BECKY UEBELE TEL: 301.258.6370		
LAND OWNER: CITY OF GAITHERSBURG 31 SOUTH SUMMIT AVENUE GAITHERSBURG, MARYLAND 20878		
REVISIONS		
NO.	DATE	DESCRIPTION
LEGEND		
————— LOD ————— LIMIT OF DISTURBANCE		
	RE-AFFORESTATION 44,430 SF / 1.02 AC	
	TREE PROTECTION PLANKLING	
	TREE TO BE REMOVED	
 <b>CENTURY ENGINEERING</b> CONSULTING ENGINEERS - PLANNERS 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400     FAX: (443) 589-2401		
PROJECT NAME:		
GREAT SENECA HIGHWAY STREAM RESTORATION PROJECT		
SHEET TITLE:		
LAKELANDS FOREST PRESERVATION PLAN		
SEAL:	PROJECT NO. 151078.02	
	SCALE: 1" = 40'	DATE: 1/31/2018
	DESIGN: AB/SH	CHECK: TT
	DWG NO. FC-02 OF 02	
	SHEET NO. 45 OF 45	